Gábor Hosszú

Heritage of Scribes

The Relation of Rovas Scripts to Eurasian Writing Systems

HERITAGE OF SCRIBES

The Relation of Rovas Scripts to Eurasian Writing Systems

Written by

GÁBOR HOSSZÚ

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The Relation of Rovas Scripts to Eurasian Writing Systems

Written by: Dr. habil. Gábor Hosszú, Candidate of Sciences of the Hungarian Academy of Sciences

Reviewers: *Modeling:* Prof. Ferenc Kovács, Doctor of the Hungarian Academy of Sciences

Hungarian linguistics: Dr. Erzsébet Zelliger, Candidate of Sciences of the Hungarian Academy of Sciences

Linguistic advice: György András Jeney

Translation: Dr. habil. Gábor Hosszú and László Sípos

Carolyn Yohn, translation editor

Editing and cover page design: Tamás Rumi and László Sípos

Foreword: Dr. István Erdélyi, Doctor of the Hungarian Academy of Sciences

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To My Mother

1927 – 2010

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Foreword

The new theories described in the Rovash Atlas result from of a surprising intellectual puzzle and exciting experiment. Hopefully no readers will think that dealing with ancient Rovash scripts is just science for science's sake. The authors of the inscriptions, shorter and longer texts made with rovash, always had as their goals to communicate with someone, to record and convey information. Some of the relics have yet to be deciphered, as we do not know their exact language. Additionally, time and time again rovash were consciously used for secret communication, as we will see later on.

A long time ago, there was a significant need for the creation of the Rovash Atlas, and for a credible presentation and explanation of well-known relics. This complex task was finally performed by the present author with a university degree in engineering. In order to complete this task, the author dealt with a huge amount of domestic and foreign scientific literature; moreover, he had to evaluate works and theories by diligent, but amateur, Hungarian Rovash researchers. The result of this extensive research is the Rovash Atlas, the first comprehensive work published with scientific accuracy and precision since the monograph "*The authentic relics of the Szekely-Hungarian Rovash Writing*" (published in 1915) by ethnographer Gyula Sebestyén, eminent researcher of Hungarian historical folklore and late Director General of the Hungarian Museum of Ethnography.

Research into the Hungarian and Avar Rovash scripts is closely related to great historical mysteries. In particular, the origin of the Avars, their ethnographical identity and language, and the origin and language of the Szekelys (whose language was never Turkic) are just examples. However, the author of the Atlas demonstrated acute awareness of his responsibility to deal with these sensitive matters.

Emil Jakubovich, another eminent researcher of the Szekely Rovash script, published the Szekely Rovash Alphabet in 1935, and later, his work was continued by Turkologist Gyula Németh in Budapest. After World War II, further valuable relics were explored among the Avar Age findings from not only Transylvania but also from Hungary, which raised questions about the origin of the Rovash script.

More and more attempts were made to decipher the inscriptions of the famous Golden Treasure of Nagyszentmiklós. In addition, numerous new discoveries and relics from the areas east of the Carpathian Mountains—from the Khazar Khaganate to the remote Mongolia—enhanced the number of archaeological Rovash finds.

In case of the rovash findings dated before the Magyars entered the Carpathian Basin (ca. end of the 9th century), a specific problem arose, as the whole rovash character set was undeciphered. In addition, at this time only one inscription was known, which was relatively short.

The author of the Atlas, besides the "main goal" of the book, also undertook a very rare task in Hungary: to tentatively outline a novelty genesis theory of the Rovash scripts. Since the author's monograph is published in English, it will very probably draw the attention, opinion and criticism of scientists of foreign countries as well.

We strongly emphasize that, besides the living, ancient-rooted Szekely-Hungarian Rovash script, the Avar Rovash and the Rovash inscriptions of the Golden Treasure of Nagyszentmiklós are part of our national heritage as well. However, the whole symbol set of any of those Rovash scripts were not known. Luckily, they all appear in the book.

Special acknowledgement is due to the author for introducing the Szekely-Hungarian Rovash inscriptions and texts as part of a living writing system. This approach is especially important as the usage of other Rovash scripts east of the Carpathians already disappeared a long time ago.

At the same time, the Atlas does not include “rovash relics” of uncertain origin and age, which are attempted to be deciphered from time to time by amateurs. Examples of these relics are the Viking spear with rovash inscription in the museum in Komarno [in Slovakia], the stone relic of Pécs forming a coat of arms on which there are posterior lesions reminding one of Rovash scripts, and the bronze Cicada-like clothing clip relic often referred to as the bronze Hunnic Rovash Relic of Budapest.

István Erdélyi

Doctor of the Hungarian Academy of Sciences

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Prof. **István Szathmári**, Doctor of the Hungarian Academy of Sciences, Professor Emeritus in the Department of Current Hungarian Linguistics at Eötvös Loránd University of Budapest,

Mr. **Gergely Szenthe**, Archaeologist Museology Specialist of the Hungarian National Museum,

Prof. **István Vásáry**, Doctor of the Hungarian Academy of Sciences, Professor in the Department of Turkic Philology and Director of Oriental Studies Institute of the Eötvös Loránd University,

Dr. **Erzsébet Zelliger**, Candidate of Sciences of the Hungarian Academy of Sciences, Associate Professor in the Department of Hungarian Historical Linguistics, Sociolinguistics, and Dialectology at the Eötvös Loránd University,

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1. Introduction

Computational paleography is a branch of applied computer science that deals with the evolution of scripts. I developed a new approach of the computational paleography, which concentrate on the descent tie of each grapheme. I applied the developed methods for the Rovash (pronounced "rove-ash", other spelling: Rovas) scripts.

The history of Rovash scripts of Hungarians and their ancestors has been the subject of heavy research efforts from the past until today. The word *rovash* has several meanings in modern Hungarian, e.g. *carving* (related to the ancient writing technique) and *writing* (to record or make note of). In this book, different known scripts belonging to the family of Rovash scripts are presented, namely[1]

- the **Proto-Rovash** /ˈproː-toː-rovaːʃ/
- the **Early Steppean Rovash** /ˈər-leː steppɪən rovaːʃ/
- the **Carpathian Basin Rovash** /kaːˈpeɪθjən ˈbeɪsn rovaːʃ/,
- the **Steppean Rovash** /steppɪən rovaːʃ/, and
- the **Szekely-Hungarian Rovash** /seːkɛj hʌŋˈeərɪən rovaːʃ/.

There are several common graphemes in the Rovash scripts. The members of the Rovash script-family are the Proto-Rovash, the Early Steppean Rovash, the Carpathian Basin Rovash, the Steppean Rovash, and the Szekely-Hungarian Rovash. In each Rovash script, various orthographies, or in other words, different alphabets, can be identified.

A common feature of these five Rovash scripts is that none of them were created artificially, but they gradually differentiated after the geographical isolation of their users. The first four scripts became extinct in the Medieval Times; the fifth one continued to be used throughout history until the present. Proto-Rovash was in use from the 7th-6th century BC to the 11th-12th century AD, mainly in the Eastern European Steppe. Early Steppean Rovash was used from the 3rd century BC to the 10th century AD in Middle Asia. Carpathian Basin Rovash was in use in the Carpathian Basin from the 6th-7th to the 11th-12th centuries, according to archaeological finds. Steppean Rovash was used by nations and tribes of the late Khazar Khaganate from the 8th to the 10th century. One group of Khazars called Khavars joined the Magyars in the 9th century, entered into the Carpathian Basin with the Magyars, and took part in the formation of the Hungarian nation at the end of the 9th century.[2] Szekely-Hungarian Rovash has been used since the 9th century by the *Szekelys* /seːkɛjs/ (also called Seklers)—an organized border guard subgroup of the Hungarians. The Szekelys preserved this script through the centuries. Szekely-Hungarian Rovash was continuously adapted to the evolving Hungarian language. Besides the traditional use areas (personal use, mailing, carving onto walls and wooden sticks), currently Szekely-Hungarian Rovash is also used in the mass media, publishing and education in Hungary and in every country of the world where Hungarians communities exist.

It is important to clarify that this book deals with the computational paleography (especially the computational Rovash paleography) and not with the clarification of the ancient history of Hungarians. However, some historical facts are necessary to understand the development of the scripts. All historical and linguistic data in this book are therefore based on the theories and statements of acknowledged scholars, historians, archaeologists, and linguists. However, alternative theories of other acknowledged researchers also do exist. In order to describe the evolution of the Rovash scripts, a coherent historical model was used. Moreover, the author of this book emphasizes that the transcription of each relic uses exclusively the authentic drawings of the archaeologists.

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[1] Hosszú 2013, pp. 91–93

[2] Róna-Tas 1999a, p. 56

This book presents general descriptions of the Rovash scripts, their relationships and connections to other scripts and describes the genealogy of the rovash graphemes and the most important rovash finds. The elaborated analysis method used in the description is based on the phonemic/phonetic values of each glyph (graphemic symbol), their topological comparisons, and the geographical and historical circumstances of the finds. It is noteworthy that the real pronunciation of ancient inscription is very hard to reconstruct, therefore the consequent differentiation between phonemes and phones (actual sounds) is usually impossible. The glyphs of a script could be (*i*) borrowed from other scripts, (*ii*) created as a new one based on an existing glyph, or (*iii*) combined by the previous two ways. For determining the origin of the glyphs, the method described below was developed. If two identical glyphs were found in different scripts, then these glyphs might be borrowed from each other. However, there are three conjunctive conditions for the assumption of borrowing:

1. The sound value (phone) of the grapheme in the *recipient* script is identical to the sound value (phone) of the appropriate grapheme in the *donor* script (or the difference is linguistically justified by acknowledged scholars).
2. The *historical and geographical facts* prove or at least do not rule out the relation between the donor and the recipient scripts.
3. *Typologically (structurally)* the appropriate glyphs of the donor and recipient scripts are identical or their difference is reasonable.

If all of these conditions are met, the appropriate glyph of the donor script is taken to be related to the examined glyph of the recipient script. Since this method aims to show the simplest possible relationships of the involved scripts, it has been called the **Minimum Entropy Method**. This method is the direct application of *Ockham's razor* (*law of parsimony*), the principle stated by the scholastic philosopher *William of Ockham*.[3] He stated that, of competing theories, the simplest explanation is to be preferred. In this case, when new relics are found, the relationship between scripts could be refined. A complex algorithmic method for identifying the relations of the glyphs was developed in 2010–2012.[4]

Based on the discovered ties, the author of this book proposes a systematic description of the rovash glyphs named **Rovash Atlas**. Using the Minimum Entropy Method mentioned above, the genealogy of each rovash grapheme and a **Layered Model** of the evolution of the Rovash scripts are elaborated. Additionally, new conclusions about the paleography of other scripts were also obtained, especially in conjunction with the *Glagolitic* and *Old Turkic* scripts, as their evolution is partly related to the Rovash scripts.

The Rovash Atlas—the genealogy of each rovash grapheme and the relations of each script—will be useful for future research. It is similar to the periodic table of chemical elements in showing their common properties. In the case of the rovash graphemes, the topological variations of the glyphs, including the diverse and lesser-known historical, geographical, ethnical, and cultural background of their users form a complex system. The Rovash Atlas is useful in determining the degree of relationship of the glyphs. Several ties were explored first during the elaboration of the Rovash Atlas; these are presented in this book. An important result of this research is the introduction and identification of two proposed ancient scripts, namely *Proto-Rovash* and *Early Steppean Rovash*, which affected each other.[5] The Proto-Rovash script is the proposed common ancestor of Carpathian Basin Rovash and Steppean Rovash. The Early Steppean Rovash influenced Proto-Rovash, directly affected Steppean Rovash, and is one of the ancestors of the *Old Turkic* script. The term "*Old Turkic script*" is used in this book as the name of the official script of the Second Turkic Khaganate (681–745 AD) and is independent from the linguistic term "*Old Turkic language*."[6] The Old Turkic script was in use in East-Middle Asia, while the Rovash scripts were used mainly in Eastern and East-Central Europe. A further result of the analysis based on the Layered Model is the separation of the development process into clear **stages**, regarding the Carpathian Basin Rovash and the Szekely-Hungarian Rovash scripts.

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[3] Encyclopædia Britannica, article "Ockham's razor"

[4] Hosszú 2010a; Tóth et al. 2010, pp. 296–307; Hosszú 2012b; Tóth et al. 2012

For better understanding, it is necessary to define a coherent naming system of Hungarian genealogy. The self-name of the **Hungarians** is **Magyar** /mɒɟɒr/.[7] The Hungarian nation and language have both Finno-Ugric and Turkic ancestors. One group of Hungarians surely lived in the Carpathian Basin before the other group of Hungarians arrived; the people of the Grand Prince Árpád came from Eastern Europe and conquered the Carpathian Basin between 894 and 902. In order to avoid misunderstandings, the Hungarian people led by the Grand Prince Árpád are named **Magyars** throughout this book, and the Hungarian-speaking population that lived in the Carpathian Basin before them is called **Hungarian**. The Magyars and the earlier population of the Carpathian Basin mixed during the 10th century and from that time on, this population is also called **Hungarian**.

The structure of the book is the following: after the comprehensive analysis of the development of the Rovash and cognate scripts and the Rovash Atlas, the alphabets and relics of the five Rovash scripts are presented. Recent rovash orthographies—as variations of the Szekely-Hungarian Rovash script—are also demonstrated by examples.

In this book, the following abbreviations are used: **PR** for *Proto-Rovash*, **ESR** for *Early Steppean Rovash*, **CBR** for *Carpathian Basin Rovash*, **SR** for *Steppean Rovash*, and **SHR** for *Szekely-Hungarian Rovash*. A complete list of the applied abbreviations and their meaning including the short notations of well-known resources, are listed in *Ch. 2*.

Phonetic transcription provides a one-to-one relationship between sounds and linguistic symbols. It has two types: *broad transcription* and *narrow transcription*. Broad transcription indicates only the more noticeable phonetic features of an utterance, whereas narrow transcription encodes more information about the phonetic variations of the specific allophones in the utterance. One particular form of a broad transcription is a *phonemic transcription*, which disregards all allophonic difference. In this book, the **narrow transcription** is used; however, in some cases, the accurate sound value of a graphemes cannot be determined. In these cases, more sound values are attached to a certain grapheme. E.g., Danka supposed that in Old Turkic there was not velar fricative sounds but instead uvular fricatives. However, this question has not been clarified completely; therefore, in this book, the velar fricatives /x/ and /ɣ/ are used instead of the uvular frivatives /χ/ and /ʁ̞/.[8]

IPA (International Phonetic Alphabet) symbols were applied for representing phonemes and occasionally actual sounds (*Appendix A* lists the definitions of the used IPA symbols). In this book, each cited grapheme is presented by its glyph then it is usually followed by its grapheme-name and its phonetic representation for increasing the accuracy of the discussion.

More information about the topics in this book can be found on the **Rovaspedia** website at *http://wiki.rovas.info*

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[5] Hosszú 2010a, p. 19

[6] Róna-Tas 1991a, p. 24; Erdal 2004

[7] Róna-Tas 1996b

[8] Danka, Balázs 2013: *Personal communication*

2. Abbreviations, glossary and sources

*	*Asterisk* is used before a glyph or a sound to denote that the following glyph or phoneme is restored and not attested to by a relic. It is also used before the name of a nation to denote that its orthography is reconstructed and not attested to by finds. Moreover, the *asterisk* (*) is applied to denote that a script is a reconstruction and not attested to by relics. Before non-English word: restored word. Before English word: uncertain meaning.
/ /	*Slashes* Denote phonemic representation of graphemes (phonemes, sporadically allophones as well): phonemic transcription.
< >	*Angled brackets* are used for denoting transliteration value (value in Latin script of graphemes in Rovash scripts).
[ ]	*Square brackets* are used for denoting the English translation in the bibliography and the completion of the missing graphemes in the transcriptions of the inscriptions. In grammar: phonetic transcription (denoting allophones), in text: missing text in inscriptions.
\	*Backslash* is used in transcriptions; it denotes the line break of the original text.
‘ ’	*Single quotation marks* are used for marking an English interpretation of the examined word or terms.
#	*Hash mark* denotes the numeric value of the grapheme.
abl.	Ablative case
acc.	Accusative case
allophone	A non-contrastive unit of sound in a language; a member of a phoneme.[9]
Annales Alamannici	In: *MGH SS*, vol. I, Hannover, 1826
Annales Bertiniani	In: *Annales de Saint-Bertin*, ed. F. Grat, J. Vielliard, S. Clemencet and L. Levillain, Paris, 1964
Annales Fuldenses	In: *MGH SRG*, ed. Fridericus Kurze, Hanover, 1891
Annales Iuvavenses maximi	In: *MGH SS*, ed. H. Bresslau, Vol. 30, Hanover, 1926, pp. 727–744
Annales regni Francorum	In: *MGH SRG*, ed. Fridericus Kurze, Hanover, 1895
App.	Appendix
c.	century
CBR	*Carpathian Basin Rovash* script
cf.	compare
Ch.	Chapter

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[9] Rogers 2005, p. 289

character	Character can be accents, diacritical marks or graphemes with additional property; namely, oppositely to the graphemes, the character has a code point, which is used in the computerized presentation.
ED	Clauson, Sir Gerard (1972): *An Etymological Dictionary of Pre-Thirteenth-Century Turkish.* Oxford: Clarendon Press.
DTS	*Drevnetjurkskij Slovar*, ed. V.M. Nadeljaev et al. Leningrad, 1969
Encyclopædia Iranica	Vol. 1–14, Gen. Ed.: Ehsan Yarshater. Published by Encyclopaedia Iranica Foundation, (Center for Iranian Studies, Columbia University), 1985–present, ISBN 1568590504
ESR	*Early Steppean Rovash* script
EtSz.	Gombocz, Zoltán & Melich, János (1914–30, 1930–44): *Magyar etymologiai szótár* [Hungarian Etymological Dictionaly] *I–XVIII.* Budapest: Magyar Tudományos Akadémia [Hungarian Academy of Sciences]
gen.	Genitive case
glyph	A graphemic symbol, several glyphs can represent a grapheme or a character.
grapheme	Grapheme is the abstraction of a symbol. Graphemes can be letters, ligatures, pseudo-ligatures, numerals, or punctuation marks.
HB	*Halotti Beszéd* [Funeral Sermon] (ca. 1195). Publications: *Benkő (1980)*, pp. 47–49 (transcription), pp. 55–57 (interpretation), pp. 290–313 (passim). Erzsébet Abaffy: Korai kis szövegeink újabb olvasata [Newer read of our early small text relics]. In *Magyar Nyelv* [Hungarian Language], Vol. LXXXVI, 1990, pp. 124–127.
HBK	*A Halotti Beszédet követő Könyörgés* [Prayer after the Funeral Sermon] (ca. 1195). Publications: *Benkő (1980)*, pp. 47–49 (transcription), pp. 55–57 (interpretation), pp. 290–313 (passim). Erzsébet Abaffy: Korai kis szövegeink újabb olvasata [Newer read of our early small text relics]. In *Magyar Nyelv* [Hungarian Language], Vol. LXXXVI, 1990, pp. 124–127.
Heb	Epistle to the Hebrews. *In New Testament.*
imp.	Imperative mood
instr.	Instrumental case
Ioh	The Gospel According to John. *In New Testament.*
IPA	*International Phonetic Alphabet*
Italic	*Italic* typeface is used for denoting an orthographic transcription only in the case of Latin graphemes.
letter	Grapheme that represents a phoneme
loc.	Locative case
LTR	*Left-to-right writing direction*
MGH	*Monumenta Germaniae Historica inde ab a. c. 500 usque ad a. 1500*, ed. G. H. Pertz et al. Publication: Hanover. Berlin, etc. (1826–present)
MGH SRG	*Monumenta Germaniae Historica: Scriptores rerum Germanicarum in usum scholarum seperatum editi* (1871–)
MGH SRM	*Monumenta Germaniae Historica: Scriptores rerum Merovingicarum.* Hannover. ISSN 0343-7574
MGH SS	*Monumenta Germaniae Historica: Scriptores* (in folio) ISSN 0343-2157 (1826–)
Mt	The Gospel According to Matthew. *In New Testament.*

MünchK.	*Codex of Munich* (1466). Kritikai szövegkiadás a latin megfelőjével együtt [Critical text publication with its Latin origin]. Publisher: Antal Nyíri. Series: Codices Hungarici, Vol. 7, Budapest: Akadémiai Kiadó, 1971.
Normalized glyph	A designed glyph of a grapheme in accordance with the most significant visual properties of a grapheme.
O	Object
ÓMS	*Ómagyar Mária Siralom* [Old Hungarian Lamentation of Mary] (13th century). Publications: Loránd Benkő: *A magyar nyelv legkorábbi szövegemlékei* [The earliest text relics of the Hungarian language]. Budapest: Akadémiai Kiadó, 1980. Erzsébet Abaffy: Korai kis szövegeink újabb olvasata [Newer read of our early small text relics]. *Magyar Nyelv* [Hungarian Language], Vol. LXXXVI, 1990, pp. 124–127.
phone	The actual sound produced by the speaker
phoneme	A contrastive unit of sound in a language; a class of allophones.[10] This sound exists in the mind of the speaker.
phonemic notation	The visual representation of language phonemes.
orthography	A representation system for using a particular script to write a particular language.
phonetic notation	The visual representation of speech sounds.
ligature	A grapheme, which is composed of two or more graphemes, and represents two or more sounds pronounced after each other, e.g. the symbol '&'.
pseudo-ligature	A grapheme, which is not composed of more graphemes, and represents two or more sounds pronounced after each other.
PR	*Proto-Rovash* script
PT	Proto-Turkic (Ancient Turkic)
RTL	*Right-to-left writing direction*
S	Subject
Sect.	Section
SHR	*Szekely-Hungarian Rovash* script
SR	*Steppean Rovash* script
Subch.	Subchapter
Superscript	The superscript graphemes mean that their appropriate sounds were unmarked in the original inscriptions.
TA	*A tihanyi apátság alapítólevele* [The Founding Document of the Tihany Monastery] (1055) In Géza Bárczi (1951): *A tihanyi apátság alapító levele mint nyelvi emlék* [The founding charter of the Tihany Abbey as a linguistic relic], Budapest: Akadémiai Kiadó; József Molnár and Györgyi Simon (1976): *Magyar nyelvemlékek*. Budapest: Tankönyvkiadó, p. 15
TESz.	*A magyar nyelv történeti-etimológiai szótára* [The historical-ethimological dictionary of the Hungarian language], Vol. I–IV. Chief Editor: Loránd Benkő. Budapest: Akadémiai Kiadó, 1967–1984, ISBN 963 05 3809 1.

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[10] Rogers 2005, p. 289

Typical glyph	A specific glyph of a grapheme, which may slightly differ from the *normalized glyph*, but it is specific for a certain inscription. The typical glyph is always a glyph variant of the normalized glyph.
TLH	Róna-Tas, András & Berta, Árpád (2011): *West Old Turkic. Turkic Loanwords in Hungarian. I-II.* Wiesbaden: Harrassowitz Verlag
TNyt.	*A magyar nyelv történeti nyelvtana* [The historical grammar of the Hungarian language]. Editor-in-Chief: Loránd Benkő. Budapest: Akadémiai Kiadó, Vol. I, 1991, Vol. II/1, 1992; Vol. II/2, 1995.
Underlined	In the transcriptions of the inscriptions, the underlined graphemes mean that in the original inscriptions the appropriate glyphs formed ligatures.
V	Verb
Wessobrunner Gebet	*Südliches Bistum Augsburg*, vor oder um 814, Pergament, *Bayerische Staatsbibliothek München*: Clm 22053, III, pp. 65–66

3. The family of the Rovash scripts

3.1. General description

It is a difficult task to determine the accurate genealogy and timelines of scripts, since they are mostly based on inscriptions from surviving relics. Any new archaeological find can modify the known history of a script. At the same time, a variant of a script could be the ancestor of another script but if the relics of this variant were lost or not yet found, their relationship can be hard to prove. Fortunately, there are now enough rovash relics for a reliable general survey. Therefore, the history of Rovash scripts shall be discussed broadly before considering the Rovash scripts' rich ties to other scripts.

Rovash scripts were used in the Carpathian Basin (*Map 3.1-1*) according to the known finds from the 7th century to the present, in the area of the Eurasian Steppe from the 7th/6th century BC to the 10th century AD. In studying Rovash scripts, one important milestone is the symposium organized by the Department of Altayistic Studies and the Research Group of Hungarian Ancient History at the József Attila University of Sciences, Szeged (Hungary) in 1992.[11] A number of works presented there helped clarify the transcription of rovash relics; some of these publications are cited in this book.

The five Rovash scripts are **Proto-Rovash (PR)**, **Early Steppean Rovash (ESR)**, **Carpathian Basin Rovash (CBR)**, **Steppean Rovash** (SR), and **Szekely-Hungarian Rovash** (**SHR**). The comprehensive view of the rovash alphabets was introduced first at the end of the 20th century by the archaeologist-historian G. Vékony.[12] He transcribed inscriptions belonging to different Rovash scripts, using the same phonemes for identical glyphs.[13] Later, several improvements were made on these transcriptions mainly by Hungarian linguist E. Zelliger, Turkologist I. Vásáry, and the author of this book. In 2010, the author of this book identified the ancestor scripts, the PR and the ESR.[14] Based on the developed modeling method this book proposes a comprehensive genealogy of the rovash graphemes described in the **Rovash Atlas** (*Ch. 4*). These rovash scripts provided linguistically accepted transcriptions for several rovash relics, the longest ones are composed of 61 and 67 symbols, respectively.

Based on the research results presented in this book, the Szekely-Hungarian Rovash script gradually differentiated from Carpathian Basin Rovash in West Pannonia during the 8th–9th centuries. The earliest SHR graphemes were almost identical to a subset of CBR widely used at that time in the Carpathian Basin, and only a few SHR graphemes were slightly redesigned versions of the appropriate CBR ones. The close relationship of CBR and SHR was shown by Gy. Németh in 1932.[15] According to the archaeologist-historian I. Erdélyi, SR is related to CBR and SHR.[16] The development of SHR continued after the Magyars' Land Acquisition (*honfoglalás*, 894–902), when the Magyars brought another rovash alphabet to the Carpathian Basin.[17] This rovash alphabet was the Early Steppean Rovash (*Sec. 8.2.13*) that became extinct after the 10th century. Carpathian Basin Rovash also has strong ties to the Glagolitic script *(Sec. 3.7.1)*.

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[11] Sándor 1992b, pp. 7–8; same proceedings: Róna-Tas, pp. 9–14; Juhász, pp. 15–20; Dienes, pp. 31–40; Vékony, pp. 41–50; Ferenczi, pp. 51–68; Kósa, pp. 69–78; Harmatta 2000, pp. 21–30; Sándor 1992c, 79–91

[12] Vékony 1997a, p. 26

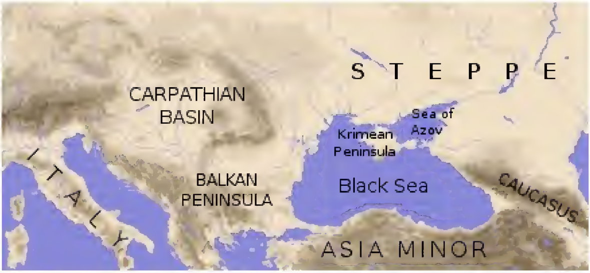
[13] Vékony 2004a, *passim*.

[14] Hosszú 2010a, pp. 15-16

[15] Németh 1932a, pp. 65–85 & 129–139

[16] Erdélyi 1982, p. 182

[17] Berta 1989; Róna-Tas 1996a, p. 289, pp. 335–341; Róna-Tas 2007a; 2007b



Map 3.1-1: The Carpathian Basin and the west part of the Eurasian Steppe.[18]

Szekely-Hungarian Rovash is still a contemporary writing system of Hungarians. As stated before, its roots have not yet been fully discovered; and research into it is closely related to the exploration of the ancient history of the Hungarians.[19] Early Hungarian history must be examined in relation to the history of Eurasia; the research methods rely on results in linguistics, archaeology, anthropology and natural history.[20] The author of this book added the system modeling used in informatics to this list.

The Rovash scripts dominantly derive from the Phoenician-origin scripts used in Persia (present-day Iran). Among others, Gy. Sebestyén described the Phoenician roots of SHR, and A. Róna-Tas stated that a kind of Semitic script is the ancestor of SHR.[21] Scholars have examined the indirect link to the Old Turkic script as well.[22] Needless to say, the Rovash scripts are obviously different from the Runic script (its subgroups: early German, Scandinavian, etc.) and the Old Turkic script as well (its subgroups: Baykal–Lena area, Yenisei valley, etc.).[23] According to Fischer, the Runic script is derived from the Greek through the following genealogical link: Greek > Etruscan > Rhaetian > Older Futhark runes.[24] Therefore, the Hungarian-origin term **rovash** /rovaːʃ/ is used for naming the mainly Aramaic-based Rovash script family, rather than the German-origin *rune* or *runic*. Additionally, the term *rovash* has been used for a long time in international literature, and it is accepted more and more in English and other languages. Some examples are shown in *Table 3.1-1*. *Table 3.1-2* shows the comprehensive naming system of the five Rovash scripts.[25]

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[18] Based on *http://printable-maps.blogspot.com/2008/08/map-physical-of-europe.html*

[19] Ligeti 1986: 261-263; Róna-Tas 1992; Vásáry 1974; Zimonyi 1990; Györffy & Harmatta 1996

[20] Róna-Tas 1999a; Erdélyi 2004a

[21] Sebestyén 1909, p. 288; Róna-Tas 1994

[22] Németh 1917–1920, pp. 31–44; Ligeti 1925, pp. 50–52; Nagy, G. 1985, pp. 269–276; Sándor 1996a, pp. 83–93

[23] Róna-Tas 1996a, p. 581

[24] Fischer 2001, p. 131

[25] Demeczky et al. 2012b, pp. 6-8

Language	Version of the word rovash
Albanian	*rabush, labush*
Bulgarian	*равош, равуш, ровуш, ръвош*
Czech	*rabuše*
Danish	*Rovás Skriften*
English	*Rovash, Rovas*
French	*le rovache*
Dutch	*Rovashschrift*[26]
German	*die Rovás-Schrift*[27]
Polish	*rowasz*
Romanian	*răvaş, răbuş, răboj, ráboş rábaş*
Serbian, Croatian	*rovaš, ravaš, raboš, rabuš, r(e)vaš*
Serbian	*ровашко писмо*
Slovakian	*rováš*
Slovenian	*rováš, rováša*
Ukrainian	*роваш*

Table 3.1-1: Examples of the international use of the word *rovash*

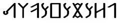
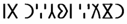
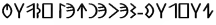
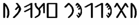
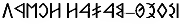
Specific attribute	Main type of the script	Sample text
Proto-	Rovash	
Early Steppean		
Carpathian Basin		
Steppean		
Szekely-Hungarian		

Table 3.1-2: The naming system of the Rovash scripts with sample texts

The early genealogy of scripts, in general, has been investigated so far in publications by I. Hackh, among others.[28] In the 20th century, several new rovash relics were discovered in the Eurasian Steppe and in the geographical area of the Carpathian Basin.[29] These new finds made possible the reconstruction of the early development of the Rovash scripts. *Fig. 3.1-1* presents the genealogy of the Rovash scripts, where the thickness of the arrows shows the quantity of grapheme adoption; the categories are 4–6, 7–9 and 10+ loan graphemes. The links including less than four borrowed graphemes are usually not denoted. The arrows do not always show direct contact between two scripts; in some cases, currently unknown intermediary scripts can be anticipated. The relations of the scripts are based on acknowledged scientific literature and morphological similarities described in the **Rovash Atlas** (*Ch. 4*).

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[26] *Cultuur in Dunaszekcső.* Web page in Dutch language. Retrieved in October 20, 2012 from http://www.kaasenbrood.eu/Dunaszekcso-cultuur.php

[27] *Miskolc (Mischkolz).* Web page in German language. Retrieved in October 20, 2012 from http://www.urlaub-ungarn.at/regionen/staedte-ungarn/staedte-nordungarn/miskolc.html

[28] Hackh 1927, p. 98

[29] Róna-Tas 1996a, p. 112

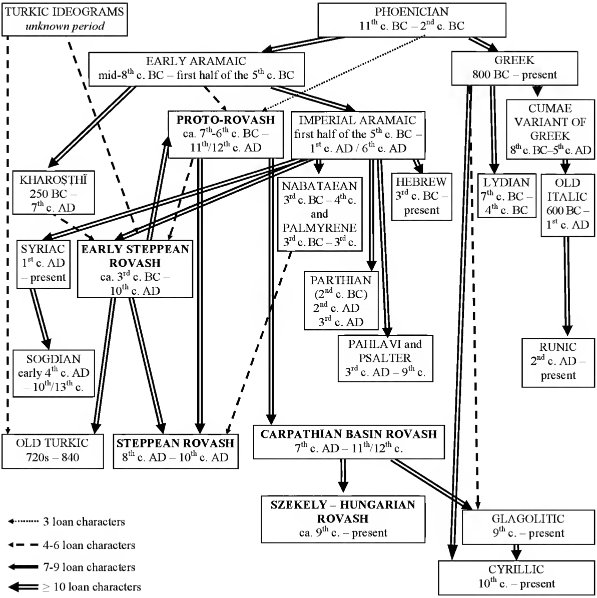

Figure 3.1-1: The genealogy of the Rovash scripts based on graphemes in the Rovash Atlas (*Subch. 4.1, 2 & 3*) excluding numerals (*Subch. 4.4*). The links including less than four borrowed graphemes and unknown intermediary scripts are generally not denoted. It is noteworthy that only the Early Aramaic > Proto-Rovash borrowing relation is denoted from the three loan-grapheme relations.

In this book, the proposed scripts *Early Steppean Rovash* (*Sect. 3.2.1*) and the *Proto-Rovash* (*Sect. 3.2.2*) are introduced in order to model the genealogy of the rovash graphemes (*Fig. 3.1-1* and *Ch. 4*). Proto-Rovash is a common ancestor of Steppean Rovash and Carpathian Basin Rovash; Early Steppean Rovash is a common ancestor of Proto-Rovash, Steppean Rovash, and the Old Turkic scripts. The comparison results of the Rovash and cognate scripts made the existence of the Proto-Rovash and Early Steppean Rovash scripts highly probable, later the present author identified them. More detailed descriptions and indirect evidence is presented in the subsequent sections. The conception of Early Steppean Rovash and Proto-Rovash as ancestors of other Rovash and Old Turkic scripts supports the statement of Róna-Tas proposing that the Old Turkic script was *"developed in at least four phases"*.[30] *Fig.3.1-2* presents the periods of use for the scripts discussed in this book.

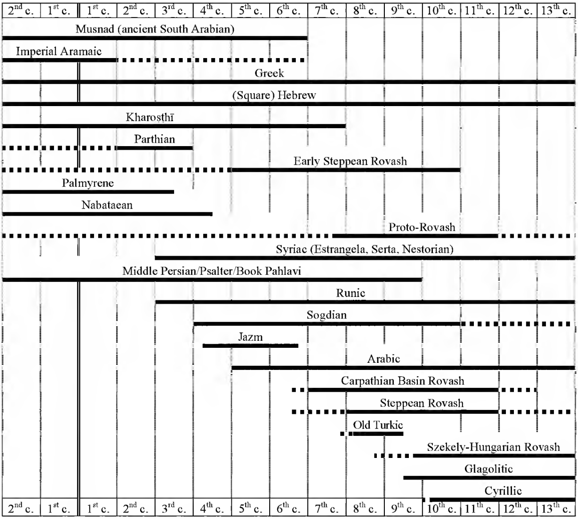

Figure 3.1-2: The periods of use of the scripts from the 2nd century BC to the 13th century AD. The solid thin, horizontal line denotes the period attested to by finds.

In early times, the scripts were rarely as uniformed as they are today, especially if they were not used in the administration or religious life of a well-organized empire. In addition, borrowing graphemes from each other was unintentional. There were two main ways the alphabets evolved: the **scholar-driven** and the **organic** way. In the history of the scripts, there are examples of both.

As for borrowing scripts, C. Hockett stated that when the same or similar *phoneme* (see *Ch. 2*) occurs in both the donor and the acceptor languages, the graphemic symbol for that phoneme remains. Symbols for sounds not used in the acceptor language (i.e. acceptor language borrows the writing system) are discarded, and new symbols are invented for acceptor language sounds that do not occur in the donor language.[31]

In the Middle East, the evolution of the Aramaic script and its numerous derivatives was typically organic, as will be presented in subsequent sections. The *organic* evolution of a script is not a linear process, and there are several casual constituents affecting the development process. Typeface designer, librarian, and systems engineer S.D. Abulhab stated that a probabilistic approach is suitable for studying such development, since the scripts evolved in several cases through adoption of surrounding alphabets and actual socioeconomic and materialistic needs.[32] He also claimed that under normal circumstances, people do not abandon their own writing system abruptly in favor of another. The relationship between orthography and the cultural circumstances was stressed by linguist K. Korompay as well.[33]

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[30] Róna-Tas 1998b, p. 127

[31] Hockett 1958, p. 545; Rogers 1999, pp. 247–248

Similarly, there are numerous examples for the *scholar-driven* way of evolution. This method was described by Turkologist I. Vásáry in 1974. He stated that in several cases, scholars improved the alphabet for their community.[34] Linguist K. Korompay assumed the influence of certain historical persons in the development of the Latin-based Hungarian orthography (*Table C-2*).[35] A very similar process can be observed in the development of the Carolingian minuscule in the Court of Charlemagne (*App. B*).

According to the traditional view of writing history, stated by C. Hockett, when the alphabetical writing system was first invented or introduced to a certain language, it was usually reasonably accurate and free from ambiguities.[36] In such a way, a newly borrowed writing system starts out with a good fit between the phonological and orthographic writing systems.[37]

The complexity of script development can be understood via the example of the *Ancient Persian* (*Achaemenid*) Empire that emerged in the 6th century BC. The Aramaic script and language were chosen for the imperial chancellery and administration (*App. B*)[38]. Under these circumstances, the Aramaic language and script developed further into the so-called Imperial Aramaic script and language. This new script was used in an extended territory from South Egypt to the Indus River and to the Pamir Mountains (mainly present-day Tajikistan). In different periods of history, the Rovash scripts borrowed graphemes from the Imperial Aramaic script and its Middle Persian descendants. Meanwhile, the glyphs of Aramaic and its descendant scripts were adapted mainly for carving techniques.

Based on the analysis of the topological relations of the glyphs, the author of this book elaborated the **Layered Model** of the Rovash scripts in which each layer originates from various Aramaic-derivatives and other scripts. By means of this model, the Rovash scripts' interaction during their evolution can be traced as well. This Layered Model fits to the transcriptions of the inscriptions on the archaeological finds proven by archaeologists and other scholars, considering the known historical, geographical facts and results of historical linguistics. This model could be applied for describing the three roots of Gothic script (Greek, Runic, and Latin) as well.[39]

The Layered Model detailed in the Rovash Atlas (*Ch. 4*) may be the subject of further refinement. At the very least, it gives a clear description and systematization method, which will help future research. The time diagram shows the dynamic interactions among the Rovash and cognate scripts (*Fig. 3.1-3*).

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[32] Abulhab 2009

[33] Korompay 2004, pp. 121–135

[34] Vásáry 1974, p. 168

[35] Korompay 2006, p. 207

[36] Hockett 1958, p. 545

[37] Rogers 1999, p. 248

[38] Györffy & Harmatta 1997, p. 147

[39] Fairbanks 1940, p. 324

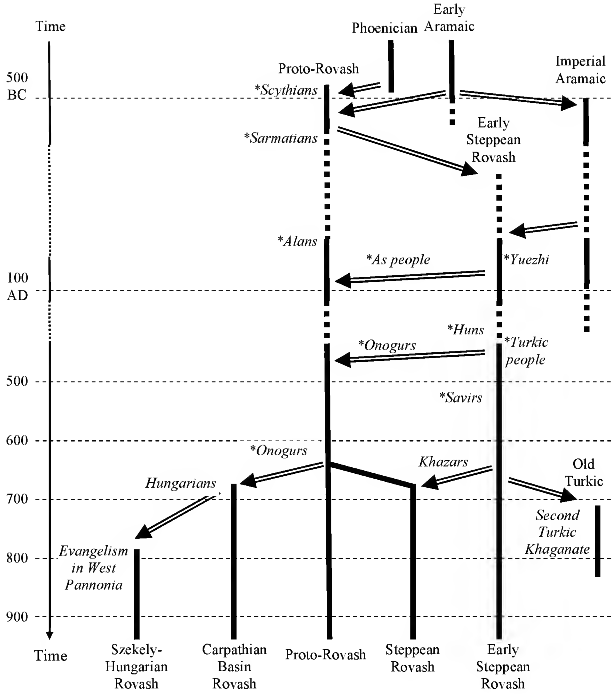

Figure 3.1-3: The time diagram of the interactions between the Rovash and cognate scripts. The symbol *asterisk* (*) before the name of a nation shows that its orthography is reconstructed.

Based on the comparisons of the appropriate glyphs of various scripts, the author identified the **script evolution principles** and the **glyph-forming methods** that were applied during the evolution of the analyzed scripts (*Table 3.1-3* and *4*). Note that these principles were not always applied *consciously*. Furthermore, several times the adoption of a glyph happened without larger modification; smaller variants of the glyph existed due to the inherent variability of handwriting literacy. Examples for applying the glyph-forming methods will be presented in the subsequent sections and collected in *Ch. 6.*

Name of the script evolution principle	Description of the script evolution principle
Adaptation	If there is no glyph for a certain sound in a script but it becomes necessary, an existing glyph is reapplied for the required sound.
Borrowing	Borrowing (adopting) a grapheme from another script with the needed sound value.
Closer-shape forming	Modifying a glyph in order to reach a more closed glyph.
Differing	Modifying a glyph to differentiate its multiple sound values; typically using existing (or just created) glyph variant with different sound value.
Latin/Greek	Influence of the Latin or Greek orthographies.
Style normalization	(Re)shaping a glyph to fit existing style.
Writing technology	Simplifying or modifying the glyph for easier writing or carving in accordance to the current writing technology, materials, etc.
Symmetry	Shaping the glyphs to reach axially or centrally symmetrical forms.
Unification	After the maturation of a script, alternative graphemes for the same sound dropped out of use.
Vertical emphasis	During the formal changes, the main line of the glyph tends to be vertical.
None	The glyph was not modified.

Table 3.1-3: The script evolution principles applied in the development of the analyzed scripts.

Code	Name of the glyph-forming method	Description of the glyph-forming method
$\mathbf{M_1}$	**Slight modification**	The glyph is only slightly modified compared to its ancestor.
$\mathbf{M_2}$	**Line insertion or removal**	Inserting an auxiliary line or removing a line of the glyph.
$\mathbf{M_3}$	**Line extension, shortening or shifting**	Extending, shortening or shifting a line of the glyph.
$\mathbf{M_4}$	**Mirroring or rotating**	Mirroring or rotating the glyph or a part of it, e.g. in forming a ligature.
$\mathbf{M_5}$	**Ligature formation**	Developing a new glyph from the ligature of existing glyphs.
$\mathbf{M_6}$	**Duplication**	Duplicating the glyph in order to get a new one.
$\mathbf{M_7}$	**Line merger**	Merging two angled lines of the glyph into one line.
$\mathbf{M_8}$	**Ornamenting**	The glyph is modified in order to look cursive, ornate or to have smooth angles.
$\mathbf{M_0}$	**No modification**	The glyph did not change.

Table 3.1-4: The glyph-forming methods applied in the development of examined scripts.

The rules of naming graphemes and marks are summarized in *Table 3.1-5*.

The naming rules of the graphemes and marks
In case of known alphabets, the widely accepted names are used in this book.
The terms "OPEN", "CLOSED", etc. in some grapheme names reflect the topological features of the glyphs and they have no linguistic relevance.
The same graphemes in the five different Rovash scripts have the same name.
The names of the ligatures are composed of the grapheme names of their elements.
The names of numerals, diacritical marks and punctuation symbols are identical to the standard English terms.

Table 3.1-5: The naming rules for graphemes and marks

In accordance with their Aramaic origin, the Rovash scripts skip the majority of the vowels. Some general rules have been explored for all descendants of the *Proto-Rovash* and the *Early Steppean Rovash* (*Fig. 3.1-3*). In case of Szekely-Hungarian Rovash, the rules of creating ligatures (*Rule 7* in *Table 3.1-6*) were systematically described by S. Forrai, who explored similarities between the Szekely-Hungarian Rovash ligature creation and the Hungarian stenography as well.[40]

The common orthographic rules of Rovash scripts in early times	
Rule 1)	The direction of Rovash scripts was right-to-left (RTL) in ancient times. Only in the case of Szekely-Hungarian Rovash, left-to-right (LTR) direction appeared in Medieval Times. There are sporadic examples also for the boustrophedon direction.
Rule 2)	The long vowels (e.g. /aː/) were usually denoted and the short vowels (e.g. /a/) were generally not written.[41]
Rule 3)	The short vowel of the first syllable was written in several cases.
Rule 4)	The short vowel of the last open syllable was written in several cases.
Rule 5)	In the case of two neighboring vowels, only one of them should be omitted.
Rule 6)	The short and long vowels were represented by the same grapheme up to the 17th c.
Rule 7)	Ligatures were occasionally used denoting all consonants—at least partly.[42]
Rule 8)	The duplication of consonants was infrequently denoted.
Rule 9)	All consonants were usually written except the case of long consonants *(Rule 8)*.

Table 3.1-6: Orthographic rules of Rovash script.

Steppean Rovash script was named *Khazarian Rovash script* by G. Vékony, the archaeologist-historian who deciphered its inscriptions first.[43] Groups of inscriptions found in the late Khazar Khaganate and the Volga Bulgaria were classified into smaller groups by I. L. Kyzlasov.[44] However, in this book, there is a more refined structure of the Rovash scripts; namely, the rovash relics, which were claimed by Vékony as "Khazarian Rovash" inscriptions, belong to any of the following scripts: *Proto-Rovash*, *Early Steppean Rovash*, and *Steppean Rovash*. The comprehensive comparison of the alternative classification and naming systems are presented in *Table 3.1-7*. It is noteworthy that categories do not fit to each other perfectly.

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[40] Forrai 1994

[41] Róna-Tas 1991a, pp. 58–60

[42] Vékony 1987a, p. 21

[43] Vékony 2004a, p. 111

[44] Kyzlasov 1994, pp. 321-323 & 327

Naming system of this book	Naming system of Vékony[45]	Naming system of Róna-Tas[46]	Naming system of Kyzlasov[47]	
Proto-Rovash script	Khazarian (Rovash) script	Eastern European scripts	Euro Asiatic group of the Türkic scripts	Don, Kuban (inlcuding Balkarian), Don-Kuban, South Yenisei, Achik-Tash, and Isfar scripts
Early Steppean Rovash script				
Steppean Rovash script				
Carpathian Basin Rovash script	Carpathian Basin (Rovash) script			Tisza script
Szekely-Hungarian Rovash script	Szekely (Rovash) script		Hungarian script	
Old Turkic script	(Eastern) Turkic (Rovash) script	(Eastern) Turkic script	Asiatic group of the Türkic scripts	Yenisei script, Orkhon script, Talas script

Table 3.1-7: Comparison of different naming systems. Note that the various spellings of the terms of different authors are unified (e.g. using the river-names *Yenisei* and *Tisza* instead of *Enisei* and *Tissa* of Kyzlasov).

3.2. Early Rovash scripts

3.2.1. The Proto-Rovash

Archaeologist G. Vékony identified three different Rovash scripts based on the relics, namely the Carpathian Basin Rovash (CBR), the Khazarian Rovash, and the Szekely-Hungarian Rovash (SHR). Comparing the graphemes in the CBR, Khazarian Rovash, and SHR scripts, I realized that a part of the relics identified as Khazarian Rovash by Vékony belong to other, earlier Rovash scripts, the *Proto-Rovash* (PR) and the *Early Steppean Rovash* (ESR). The author calls the script of the Khazarian Rovash relics not belonging to the PR or the ESR as Steppean Rovash (SR).

Considering the graphemes of the Rovash relics, the author realized that these relics preserved glyphs from their common ancestor, Proto-Rovash. Based on Rovash relics, the author reconstructed the grapheme repertoire of the Proto-Rovash script (*Table 3.3-1*), since the shape of several graphemes remained almost unchanged in the Rovash scripts. Note that in this section only that rovash graphemes are taken into account, which are not used in the Old Turkic relics. However, also there was a common ancestor of the Rovash and the Old Turkic scripts called Early Steppean Rovash.

There is evidence of the influence of the Phoenician and the Early Aramaic scripts on Proto-Rovash (*Table 3.2.1-1* and *3.2.1-2*). Note that the Phoenician grapheme borrowed by the Proto-Rovash belongs to the Late Phoenician alphabet, which was used in a relic dated 590 BC found in Ipsambul

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[45] Vékony 2004a, *passim*.

[46] Róna-Tas 2007b, pp. 22-24

[47] Kyzlasov 1994, *Table 23*

(Ipssambul).[48] The other name of Ipsambul is Abu Simbel (Egypt), where a relic of Greek, Carian and Phoenician soldiers of the pharaoh Psamtik II (594-589 BC, Dynasty XXVI) inscribed their names upon the two southern colossi.[49] These graphemes are relics of the Late Phoenician alphabet. According to *Table 3.2.1-2*, the Proto-Rovash borrowed three Early Aramaic graphemes, too. However, in the first half of the 5th century BC, the Imperial Aramaic was evolved instead of the Early Aramaic (see *App. B*). Consequently, borrowing these oldest graphemes surely happened around 7th-6th centuries BC. The Late Phoenician glyphs 𐤑, 𐤑 and 𐤑 are from a relic found in Ipsambul from 590 BC.[50]

It is noteworthy that the sound value of the Phoenician TSADE was not an elemental sound, but a combination of two sounds, /t/ and /s/.[51] In this book, the grapheme name 'TSADE' is used after Rawlinson instead of the alternative letter name 'SADE'.

Late Phoenician	Proto-Rovash	Early Steppean Rovash	Carpathian Basin Rovash	Steppean Rovash	Szekely-Hungarian Rovash
𐤒 QOF /q/	*(There is no occurrence in relics)*	⧖ ANGLED Q /q/	8, *(Aethicus)* ꝭ ARCHED Q /q/	8 ARCHED Q /q/, ⧖ ANGLED Q /q/	𐲩 CH /x/
𐤑, 𐤑, 𐤑 TSADE /sˤ/	𐲆 CS /t͡ʃ/	*(There is no occurrence in relics)*	*(Aethicus)* ᒣ, *𐲆 CS /*t͡ʃ/	𐲆 CS /t͡ʃ/s/	𐲆 CS /t͡ʃ/

Table 3.2.1-1: Influence of the Late Phoenician script on Rovash scripts through Proto-Rovash

Early Aramaic	Proto-Rovash	Carpathian Basin Rovash	Szekely-Hungarian Rovash	Steppean Rovash
𐤀 ALEPH /ʔ/	ϒ FORKED A /a/e/, Ꭹ FORKED E /a/ɛ/	ϒ, ϒ FORKED A /a/ɛ/, Ꭹ FORKED E /a/ɛ/e/	𐲁 AA /ɒ/a/aː/ɛ/e/eː/	ϒ FORKED A /a/ɛ/
	(There is no occurrence in relics)	7, ⋺ ARCHED UE /y/*ø/	*(There is no occurrence in relics)*	⟩ ARCHED E /a/aː/ɛ/, 7 ARCHED UE /ø/y/
𐤄 HE /h/	*(There is no occurrence in relics)*	ᛦ, *(Aethicus)* ƕ° SHARP CH /x/	(*There is no occurrence in relics*)	ᛦ SHARP CH /h/
𐤍 NUN /n/	Ꮥ, Э FORKED N /n/	Ↄ SHARP N /n/	(*There is no occurrence in relics*)	Ꮥ FORKED N /n/

Table 3.2.1-2: Influence of the Early Aramaic script on Rovash scripts through Proto-Rovash

The interesting glyph of ᛦ SHARP CH is found in both CBR and SR. The style of the glyph ᛦ is significantly different from other rovash graphemes, and it is quite similar to the style of the graphemes in the *Issyk Inscription* dated to the 4th–3rd century BC[52] or the 5th century BC[53].

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[48] Powell 1991: Table of Phoenician and Greek Letterforms

[49] Breasted 1906-1907, vol. III, pp. 124 et seq., esp. 212

[50] Powell 1991: Table of Phoenician and Greek Letterforms

[51] Rawlinson 1889

[52] Hall 1997, pp. 863–874

According to Iranist Harmatta, the Issyk Inscription is written in *Kharoṣṭhī* (Kharoshthi) script.[54] However, the accurate descent line of the ⩚ SHARP CH has not yet been clarified.

It was already stated that the Kharoṣṭhī script was used in Middle-Asia (Bactria),[55] and this script was surely transmitted by the *As*es (the Iranian-speaking people from Kangju, see *App. B*) to the north of the Black Sea and the Caucasus (*Map 3.1-1*), that was the land of the Alans at that time. A possible influence of the Kharoṣṭhī script is presented in *Table 3.2.1-3*.

Kharoṣṭhī	**Early Steppean Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**
𐨫 LA /la/	ƛ CROSSED L /l/	⅄ FORKED L /l/	𐲖 L /l/	(*There is no occurrence in relics*)

Table 3.2.1-3: Influence of the Kharoṣṭhī script on Rovash scripts.

The influence of the Imperial Aramaic script on CBR, SHR, and SR through Proto-Rovash is shown in *Table 3.2.1-4*, with Faulmann's example of the glyph 𐡐 of the Imperial Aramaic PE /p/f/.[56] Due to historical reasons, this influence surely happened through the Early Steppean Rovash. In the Rovash Atlas (*Ch. 4*), the *Nabataean* (𐢓, 𐢔) and *Palmyrene* (𐡰) glyphs of PE /p/ are from Nyberg.[57] Comparing these glyphs of PE, the Imperial Aramaic grapheme seems to be the most probable ancestor of the rovash 𐲠 P /p/. The Imperial Aramaic glyphs 𐡃 and 𐡃 are from papyrus of Assyria and Egypt.[58] The *Nabataean* glyphs of 𐢅, 𐢅 DALETH /d/ð/ are from Nyberg.[59] The *Parthian* glyphs of 𐭃, 𐭃 DALETH /d/ð/ are from Taylor, these glyphs are from the 3rd century AD.[60] The other glyphs of the Parthian letters are from Akbarzādeh in *Table 3.2.1-4* and *Table 3.2.2-5*.[61]

Imperial Aramaic	**Proto-Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**
𐡃, 𐡃, 𐡃 DALETH /d/ð/, cf. *Parthian* 𐭃 ,𐭃, 𐭃 DALETH /d/ð/	> SHARP D /d/ð/d͡ʒ/	> SHARP D /d/	(*There is no occurrence in relics*)	> SHARP D /ð/
𐡇 HETH /ħ/	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	Ϻ V /y/	Ϻ SHARP UE /ø/
𐡐 PE /p/f/	(*There is no occurrence in relics*)	(*Aethicus*) ⸸, 𐲠 FORKED P /f-/p/	𐲠 P /p/	𐲠 FORKED P /p/

Table 3.2.1-4: Influence of the Imperial Aramaic script on SHR, CBR, and SR through Proto-Rovash.

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[53] Amanjolov 2003, pp. 218–219
[54] Harmatta 1999, p. 421
[55] Ma & Wang 1994, p. 237
[56] Faulmann 1880, p. 94
[57] Nyberg 1964
[58] Faulmann 1880
[59] Nyberg 1964
[60] Taylor 1883
[61] Akbarzādeh 2002

In the following part, the influence of the descendants of the Imperial Aramaic on the Rovash scripts will be demonstrated. The influence of the Parthian script on SR and CBR is presented in *Table 3.2.1-5*.

Parthian	Proto-Rovash	Carpathian Basin Rovash	Steppean Rovash
𐭇 HETH /ɣ/x/h/	N GH /ɣ/, *in As–Alan:* /g/	N, И GH /ɣ/	N, ᛏ, Ḩ, ᛦ GH /ɣ/

Table 3.2.1-5: Influence of the Parthian script on CBR and SR through Proto-Rovash

Proto-Rovash borrowed graphemes from Middle Persian scripts *(Middle Persian, Psalter,* and *Book Pahlavi) (Table 3.2.1-6)*. The glyphs of the Middle Persian letters and a diacritical mark are from Nyberg,[62] and the ɔ LAMEDH /l/ from MacKenzie.[63]

Middle Persian scripts	Proto-Rovash	Carpathian Basin Rovash	Steppean Rovash
Middle Persian 𐭧 HET /h/x/	⋂ ARCHED CH /x/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*
Middle Persian 𐭩 YODH	⁾, ϒ ARCHED I /i/	⁾ ARCHED I /i/ĭ/i̯/	⁾, ᶟ ARCHED I /i/i̯/
Book Pahlavi ⅃ YODH (*In the Rovash scripts its glyph was turned with 90°*)	ᑫ CIRCLE ENDED I /i/	*(Aethicus)* ᛡ, *ᑫ CIRCLE ENDED I /i/	ᑫ CIRCLE ENDED I /i̯/i/
Book Pahlavi ɔ, ⸜ LAMEDH /l/	⸜ SIMPLE L /l/	⸜ SIMPLE L /l/	⸜ SIMPLE L /l/
Middle Persian 2 RESH /w/r/	Ω ARCHED R /r/	*(There is no occurrence in relics)*	∩ ARCHED R /r/
Psalter ◌̇ COMBINING DOT ABOVE	◌̇ COMBINING DOT ABOVE (*Table 5.1.3-1*)	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*

Table 3.2.1-6: Influence of the Pahlavi scripts on PR, CBR, and SR.

The influence of the Lydian script[64] on CBR, SHR, and SR through Proto-Rovash is shown in *Table 3.2.1-7*. The Lydian script became extinct in the 2nd century BC and the was in use in West Asia Minor (present-day Turkey). Consequently, the earliest development of Proto-Rovash was probably in this territory.

Lydian	Proto-Rovash	Carpathian Basin Rovash	Szekely-Hungarian Rovash	Steppean Rovash
𐤥 V /v/	𐤥 OPEN V /β/	𐤥 OPEN V /β/	𐤥 OPEN V /β/	𐤥 OPEN V /β/b-/
𐤪 M /m/	ȝ OPEN M /m/	ȝ OPEN M /m/	𐲘 M /m/	ȝ OPEN M /m/

Table 3.2.1-7: The probably indirect influence of the Lydian script on Rovash scripts through Proto-Rovash

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[62] Nyberg 1964

[63] MacKenzie 1971, p. xi

[64] Melchert 2004, pp. 602–603

Table 3.2.1-8 shows the influence of the Lycian script on SHR and SR. It is noteworthy that Szekely-Hungarian Rovash kept accurately the Lycian glyph. The Lycian script was in use in Southwest Asia Minor (Anatolia) up to 330 BC.

Lycian	**Proto-Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**
◇ K /k/kʲ/	◊ CLOSED Q /q/	(*There is no occurrence in relics*)	◊ K /k/	ɒ, ◊ CLOSED Q /q/

Table 3.2.1-8: The supposed influence of the Lycian script on SHR and SR through Proto-Rovash

The influence of *Nabataean* script used in the Fertile Crescent on Rovash scripts are demonstrated in *Table 3.2.1-9*. The glyph of the Nabataean 𐢚 SIMKATH /s/ is from Abulhab.[65] It is noteworthy that instead of the Nabataean the Imperial Aramaic 𐡃, 𐡃, 𐡃 DALETH /d/ð/ and the Parthian 𐭃 ,𐭃, 𐭃 DALETH /d/ð/ also a possible ancestor.

Nabataean	**Proto-Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**
𐢅, 𐢆, 𐢆 DALETH /d/ð/	(*There is no occurrence in relics*)	(*Aethicus*) ᛉ,*𐲦 T /d/	𐲦 T /t/d/	(*There is no occurrence in relics*)
𐢈, 𐢈, 𐢉 HETH /ħ/	ᔑ ANGLED CH /x/	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)
𐢓, 𐢔 LAMADH /l/	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	ᛘ ARCHED L /l/
𐢚 SIMKATH /s/	ᕐ CIRCLE ENDED SH /ʃ/	(*There is no occurrence in relics*)	Λ S /ʃ/	(*There is no occurrence in relics*)

Table 3.2.1-9: Possible influence of the Nabataean script on Rovash scripts.

The Steppean Rovash ᛘ ARCHED L /l/ is clearly of Aramaic origin. A few Aramaic-derivative scripts could have loaned this glyph to Proto-Rovash; namely, Hebrew (ל LAMED /l/), Middle Persian (𐭫 LAMEDH /l/), and Nabataean (𐢓, 𐢔 LAMADH /l/). Since the Steppean Rovash ᛘ ARCHED L /l/ appeared in an Ogur inscription in the area of the late Khazar Khaganate, the Hebrew option is less probable, the conversion to Judaism having happened predominantly within the ruling class of Khazars. Moreover, comparing the glyphs of the three possible ancestors, the morphology of the Nabataean 𐢓 is the closest to the Proto-Rovash ᛘ: in the middle of both glyphs, there is a significant rising segment connected to the upper vertical straight line. However, the appropriate segment is definitely horizontal and not rising in the cases of Middle Persian 𐭫 and the Hebrew ל.

It is a fact that the geographical distance between the Nabataean Kingdom and Eastern European Steppe was wide; however, the Sogdian script was developed from the Syriac, even though the distance between Syria and Sogdiana was much larger. Trading and cultural relations were very strong between the Middle East and the Eastern European Steppe that makes the relationship between the Nabataean and the Proto-Rovash scripts possible.

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[65] Abulhab 2009 Table of character shapes

The Nabataean 𐢖 SIMKATH /s/ and the Proto-Rovash ᐊ CIRCLE ENDED SH /ʃ/ represent different sounds. However, there are numerous examples in the paleography for a relationship between graphemes representing these *voiceless fricatives*, the *alveolar* /s/ and the *postalveolar* (*palato-alveolar*) /ʃ/. For instance, the Arabic abjad uses the ش SHIIN for /ʃ/ and س SIIN for /s/. Their glyphs are identical, differentiated with accents only. Both originated through the Jazm ﺳ /ʃ/s/ (same glyph used for both sounds) from the Proto-Canaanite 𐤔 SHIN /ʃ/.[66] In addition, the majority of Latin-based orthographies use the Latin *s* for /s/, but in the Hungarian Latin-based orthography the grapheme *s* represents /ʃ/ and the digraph *sz* denotes /s/. Conversely, the Polish Latin-based orthography uses the digraph *sz* for the sound /ʃ/.

However, in our case, a closer relationship can be detected. Two of the three Proto-Rovash graphemes supposedly related to the Nabataean script survived in Proto-Rovash inscriptions written in Ogur and one (ᐊ CIRCLE ENDED SH /ʃ/) was found in an As–Alan text. Note that the As–Alans had a very strong tie to the Ogurs in the areas north of the Black Sea. Moreover, among the Rovash graphemes later borrowed by Szekely-Hungarian Rovash (and surely the Ogurs brought them) there is the obvious descendant of ᐊ CIRCLE ENDED SH /ʃ/; the SHR Λ S /ʃ/. In Chuvash and probably in other Ogur languages, Proto-Turkic /*s/ became /ʃ/. The grapheme reception of 𐢖 SIMKATH /s/ as ᐊ CIRCLE ENDED SH /*s/ could have happened even in the Proto-Turkic period. Then /*s/ > /ʃ/ occurred in Ogur dialects but due to the conservative nature of the writing, the glyph of /s/ was kept for the new sound value /ʃ/. Note that despite the formal similarity, the PR ᐊ CIRCLE ENDED SH /ʃ/ and the PR ᑫ CIRCLE ENDED I /i/ are unrelated.

Table 3.2.1-10 presents the possible influence of the Carian script belonging to the Anatolian scripts on the Rovash scripts.

Carian	Proto-Rovash	Carpathian Basin Rovash	Szekely-Hungarian Rovash	Steppean Rovash
X NG */unknown sound value/*	X OPEN T /t/	X OPEN T /t/	(*There is no occurrence in relics*)	X, ϒ OPEN T /t/

Table 3.2.1-10: Influence of the Carian script on the Rovash scripts.

A Greek grapheme was also adopted by the Proto-Rovash, since it was necessary to record As–Alan texts (*Table 3.5.2-4*). The time of the influence of the Greek script is unknown. However, the Proto-Rovash ɸ CENTRAL F /f/ was found in an inscription written in Alan language (Stanitsa Krivyanskoe, see *Sec. 5.2.3*), and the Alans and their ancestors (Scythians, Sarmatians) used the Proto-Rovash.

Greek	Proto-Rovash
ϕ PHI /f/pʰ/	ɸ CENTRAL F /f/

Table 3.2.1-11: The influence of the Greek script on Proto-Rovash

According to the author, **the earliest version of the Proto-Rovash was the borrowed graphemes of the steppean people** (surely the Scythians) from the Late Phoenician and the Early Aramaic scripts in the 7th-6th centuries BC. It is noteworthy that it is a known fact that the Scythians adopted an Aramaic script, a direct descendant of Phoenician.[67] The Proto-Rovash script was developed in the Eurasian Steppe. Later, **Proto-Rovash was surely influenced by Early Steppean Rovash**

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[66] Abulhab 2009 Table of character shapes

[67] Györffy & Harmatta 1997, p. 148

brought by people from Middle-Asia. These people could be the As or the Ogurs. The As people come from Kangju (other name: *K'ang-chü*, located east of the Aral Sea, see *App. B*) in the 1st century AD. The Ogur people arrived from Middle Asia in the 5th century AD.

There is a concept that presumably Turkic ideograms appeared in all Rovash scripts and in the Old Turkic script as well. Up to the mid-1st century AD, the Eurasian steppe was dominated by Iranian nations, the Turkic people lived in that time in Southwest Siberia, the Altai Mountains and the Mongol Highland.[68] According to Vásáry, the Turkic-speaking Ogur people identical to the western branch of the Tieloe people (other names: Tingling, Tili, Kauko) around the Rivas Irtysh moved to the south part of the present-day Kazakh Steppe (Middle Asia) after 350s AD. In the 5th century, Ogurs appeared near the Caucasus, since another Turkic people, the Savirs pressed them. Before the Ogurs, only Iranian people used the Rovash, who surely did not use Turkic ideograms. From the 5th century, the Onogurs occupied the territories of the Alans and Ases and surely started to use the Proto-Rovash. Later, a part of the Ogurs (Onogurs) moved to the Carpathian Basin. Presumably they brought their Rovash script, and there the Carpathian Basin Rovash evolved. This script contain some Turkic ideogram-originated Rovash graphemes: ᛟ SHARP U /u̯/, X B /b/, and less probably the D CLOSED J /j/i̯/ʎ/. Consequently, these Ogurs brought that graphemes from the Middle Asia.

Currently, it is impossible to determine if As people (moved from middle Asia to Eastern Europe in the 1st AD) brought any Early Steppean Rovash grapheme from Middle Asia or only the Ogurs brought them. Some graphemes, which shows the consequences of the Rhotacism (*ǀ /*s/*r/, *□ /*r/) and the Turkic ideograms, obviously the Ogurs brought. since we suppose that all the Early Steppean Rovash graphemes were brought by the Ogurs in the 5th century and not the As people in the 1st century AD. However, based on new archaeological finds, this statement can be changed.

Presumably, the use of Proto-Rovash was brought into the Carpathian Basin sin 567 by the Avars and the allied Ogurs, who moved to the Carpathian Basin, and this script evolved to the individual Carpathian Basin Rovash. Proto-Rovash influenced Szekely-Hungarian Rovash indirectly through Carpathian Basin Rovash. In the Eastern European steppe, the use of Proto-Rovash survived up to the 11th or the 12th century.

The system of Proto-Rovash consonants and vowels in the 9th–11th centuries are presented in *Table 3.2.1-12* and *Fig. 3.2.1-1*, the meaning of each phonetic feature is detailed in *Table C-3*.

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[68] Vásáry 2003, p. 41

Place of articulation	Plosive (voiceless)	Plosive (voiced)	Nasal	Fricative (voiceless)	Fricative (voiced)	Fricative (voiceless, lateral)	Affricate (voiceless)	Liquid (voiceless, lateral)	Liquid (voiced)
Bilabial	1 /p/	ᐳ, ᛉ /b/, ᖷ /b-/	ȝ /m/		ᖷ /β/				
Dental					> /ð/	Ѱ /ɬ/			
Alveolar	Ꝺ, X /t/	∩, > /d/	), ϟ /n/	l, Ɣ /s/	Ӿ /z/			Ꝛ,) /l/	H, Ω, □, h /r/
Post-alveolar				ᖶ, Y /ʃ/			Ⲏ /t͡ʃ/ > /d͡ʒ/		
Palatal					D /j/				
Velar		ƛ, N /g/		ᔓ, ∩ /x/	N /ɣ/				
Uvular	◊ /q/								

Table 3.2.1-12: The phonetic system of Proto-Rovash consonants used in the 8th–11th centuries

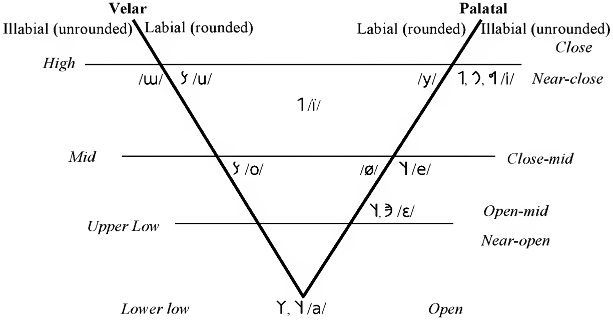

Fig. 3.2.1-1: The graphical representation of the phonetic system of Proto-Rovash vowels used in the 8th-11th century, using only some typical glyphs of each grapheme

3.2.2. The Early Steppean Rovash

Based on the known relics of Carpathian Basin Rovash, Steppean Rovash, Szekely-Hungarian Rovash, and the Old Turkic scripts, the existence of a common ancestor script can be assumed, called the *Early Steppean Rovash.* Moreover, the author of this book identified some rovash relics as Early Steppean Rovash inscriptions, see *Sec. 6.2.* The Early Steppean Rovash was probably used by Iranian and Turkic nations and tribes on the Eurasian Steppe. They were culturally connected to Persia (present-day Iran) and the Middle East as well, where the countries and empires had well-organized administrations with high-level literacy. These cultures continuously influenced the Steppean civilizations, and several glyphs were adopted by the writing systems of the steppean nations during the time. Iranist J. Harmatta also concluded similar results.[69] The multi-layer influence of the Phoenician- and Aramaic-origin scripts in the orthography of the scripts used in the Eurasian Steppe (*Fig. 3.1-1*) will be analyzed without the detailed history of the adoption process. Empires of Eurasia are shown in *Image D-1* including modern political boundaries to facilitate the reader's orientation.

According to the author of this book, four scripts were essential in the evolution of the Early Steppean Rovash (*Fig. 3.1-1*), namely Imperial Aramaic, its two descendants (Kharoṣṭhī and Parthian), and Turkic ideograms (pictograms). Among these, the Imperial Aramaic script had the strongest influence (*Subch. 4.1*). Since only one Steppean civilization, the **Yuezhi Empire adopted the Aramaic-based scripting** in the 3rd century BC, this can be considered **the beginning of the history of the Early Steppean Rovash**. The Early Steppean Rovash is believed to be the intermediary writing system between the Aramaic script and the Old Turkic script that evolved in Middle Asia. The earliest Old Turkic relics are attested from the 720s AD.[70] *App. B* lists the supposed historical milestones of the Early Steppean Rovash. Note that this supposition is derived from the genealogical modeling system of the rovash and Old Turkic graphemes. Based on the identified Early Steppean Rovash inscriptions, this script was in use up to the 10th century AD (*Subch. 6.2*).

The rovash and Old Turkic graphemes of the first row in *Table 3.2.2-1* are indicated with the same glyph (𐰯). Therefore, the glyph 𐰯 had to exist in their common ancestor, the Early Steppean Rovash, and is probably related to the Early Aramaic 𐤐 PE /p/f/. Since the descendants of the Early Aramaic 𐤐 PE /p/f/ in other scripts in *Fig. 3.1-1* (Imperial Aramaic, Kharoṣṭhī, Parthian, etc.) are significantly different from the glyph 𐰯 of *Table 3.2.2-1*, the Early Steppean Rovash could not borrow the Early Aramaic 𐤐 PE /p/f/ through those scripts. In addition, the Early Steppean Rovash could not borrow the Early Aramaic 𐤐 PE /p/f/ directly due to geographical and historical distance. Taking into account the genealogy of the graphemes 𐤐 and 𐨤 of *Table 3.2.2-1*, it is necessary to assume an *intermediary script* between the Early Aramaic and the Early Steppean Rovash scripts. It is noteworthy that the Scythians adopted the Aramaic script—according to Györffy and Harmatta[71]—, thus the intermediate script was very probably the early form of the **Proto-Rovash** script (*Subch. 3.2.2*), which is assumed to be used by the **Scythians**.[72]

It is noteworthy that the link between the Szekely-Hungarian Rovash 𐲉 CLOSED E /e/ and the Old Turkic 𐰀 E was already explored by Ligeti.[73]

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[69] Hall 1997, pp. 863–874

[70] Róna-Tas 1996c, pp. 13–15

[71] Györffy & Harmatta 1997, p. 148

[72] Györffy & Harmatta 1997, p. 148

[73] Ligeti 1925, p. 52

Early Aramaic	**Early Steppean Rovash**	**Proto-Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**	**Old Turkic**
𐡐 PE /p/f/	1 SIMPLE P /p/	1 SIMPLE P /p/	1 SIMPLE P /p/	*(There is no occurrence in relics)*	1 SIMPLE P /p/	*(Orkhon)* 𐰯 P /p/
𐡀 ALEPH /ʔ/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	𐲊, Ӿ CLOSED E /e/eː/, Ӿ, Ж, 𐲊 H /h/	𐲊 CLOSED E /e/	*(Yenisei, Talas)* 𐰅 E /e/
𐡈 TETH /tˤ/	+ SHARP T /t/	X SHARP T /z/, Ӿ CENTRAL T /t/	*(Környe)* Ӽ, *(Aethicus)* ŧ SHARP T /t/	X SHARP TY /c/, Ж TRIPLE TY /c/, Ꭓ FORKED TY /c/	Ӿ SHARP T /z/, Ӿ CENTRAL T /t/	*(Orkhon, Yenisei)* 𐰔 Z /z/

Table 3.2.2-1: Adoption of Early Aramaic graphemes

The Kharoṣṭhī script was used in Bactria (Middle Asia, see *Image D-1*). The Kharoṣṭhī letters applied in this book are based on Glass et al. published in 2002,[74] except 𐨙 NYA /ɲ/ from Allon & Salomon[75] and 𐨕, 𐨕 CHA from Glass's book published in 2000.[76] The Kharoṣṭhī script directly affected the Early Steppean Rovash (*Table 3.2.2-2*); and surely indirectly the Old Turkic script (*Table 3.2.2-3*), the Proto-Rovash (*Table 3.2.1-3*), and the Carpathian Basin Rovash (*Table 3.4.2-2*). In the probable organic development of the *Kharoṣṭhī* 𐨨 MA /ma/ > *Early Steppean Rovash* *O /m/ the script evolution principle *Closer-shape forming* (*Table 3.1-3*) can be observed. The shape of Old Turkic O M^T /m/ was described by Kononov[77] and the glyph of Old Turkic 𐱁 Š /s/ʃ/ by Róna-Tas.[78] The author of this book supposes that the common ancestor of the Steppean Rovash M LT /lt/ and the Old Turkic 𐰡 LD /ld/ were created from a supposed Early Steppean Rovash *Y SHARP L /l/ by duplicating its vertical lines. However, see also the concept of the Turkic ideograms *(Table 3.2.2-7).*

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[74] Glass et al. 2002, p. 14

[75] Allon & Salomon 2000; Schøyen collection: Fragment 44 e Part A Line 3 Syllable 10

[76] Glass 2000, p. 14

[77] Kononov 1980, pp. 58–59

[78] Róna-Tas 1991a, p. 111, *Table I*

Kharoṣṭhī	Proto-Rovash	Early Steppean Rovash	Carpathian Basin Rovash	Steppean Rovash	Old Turkic
𐨰, 𐨰 ZA /za/	ϒ FORKED SZ /s/	ϒ FORKED SZ /s/	*(There is no occurrence in relics)*	ϒ FORKED SZ /s/	𐰽, 𐰾 S^1 /s/
𐨫 LA /la/	(*There is no occurrence in relics*)	λ CROSSED L /l/	Ӽ, (*distorted*) Ѫ FORKED L /l/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*
	(*There is no occurrence in relics*)	Ι *Υ SHARP L /l/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	𐰠 L^2 /l/
	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	*(There is no occurrence in relics)*	𐰡 LT /lt/	𐰡 LD /ld/
𐨨 MA /ma/	O ROUND M /m/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(Talas)* O M^T /m/
𐨙 NYA /ɲ/	(*There is no occurrence in relics*)	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	ᒪ ANGLED N /n/	𐰤, 𐰥, ᒪ N^2 /n/
𐨭 SHA /ʃa/	(*There is no occurrence in relics*)	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	ᑎ ARCHED SH /ʃ/	*(Talas and Yenisei)* ᐱ Š^J /ʃ/

Table 3.2.2-2: Influence of the Kharoṣṭhī script on Rovash and Old Turkic scripts

Kharoṣṭhī	Old Turkic
𐨖, 𐨖 CHA	*(Orkhon)* 𐰿 Š /s/ʃ/, *(Yenisei)* 𐱀 Š /s/ʃ/
𐨠 THA /tʰa/	*(Orkhon, Yenisei)* ϯ, 𐰓 D^2 /d/
𐨤 PA /p/	*(Orkhon)* 𐰰 OP /op/up/

Table 3.2.2-3: Direct influence of the Kharoṣṭhī script on the Old Turkic script through unidentified intermediary script.

The influence of the Imperial Aramaic script through the Early Steppean Rovash is presented in *Table 3.2.2-4*; the shapes of the Imperial Aramaic 𐡊 KAPH /k/x/, the 𐡎 SAMEKH /s/ and the 𐡂 GIMEL graphemes are from Faulmann,[79] the 𐡒 QOPH /q/ from MacKenzie,[80] the 𐡒 QOPH /q/ from Nyberg,[81] while some Old Turkic glyphs are from von Gabain.[82]

The Imperial Aramaic 𐡆 ZAYIN /z/ was probably adapted by the *Yuezhi* people (*App. B*) and later the Turkic people. In the language of the Kypchak subgroups of the Turkic people there were the transitions /d/ > /t/ and /z/ > /s/.[83] That could be the reason that in all inscriptions in the Turkic language this symbol consequently has the sound value /s/; see *Table 3.2.2-4*. Specifically, in the *Ogur* (*Lir-Turkic*) languages the /z/ > /r/ transition happened, which is called Chuvash-type

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[79] Faulmann 1880, p. 79, 89

[80] MacKenzie 1971, p. xi

[81] Nyberg 1964

[82] von Gabain 1941

[83] Vásáry, István 2010–2011: *Personal communication*

Rhotacism.[84] Due to this process, the symbol | had the sound value /r/ as well. Evidence of this transformation can be observed in one relic of CBR (*Sec. 7.2.7*), where the use of the grapheme of /s/ as /r/ is explicitly stated (see the third row from the bottom in *Table 7.2.7-2*). In CBR, the grapheme | SZ was used for both /s/ and /r/. Being a descendant of CBR, the SHR also kept the use of the | SZ /s/ as /r/ surviving as ⟋ SIMPLE R /r/.

Since the Turkic people used the symbol | with sound value /s/, and the Ogurs' /r/ is a derivation of /z/ and not /s/, consequently, the Ogurs *did not borrow this symbol from the Turkic people.* Furthermore, in the Steppean Rovash and in the Old Turkic scripts, this symbol had only the /s/ sound and not /r/. Therefore, its adaptation had to happen when the Ogurs adapted the Proto-Rovash script (from a non-Turkic nation).

The adaptation of the Imperial Aramaic 𐡎 SAMEKH /s/ was somewhat different. First, its sound value probably changed: /s/ > /z/. As Vásáry showed, this transition was possible in the middle and at the end of Turkic words, e.g. /kasar/ > /kazar/.[85] Then, due to the *Rhotacism*, the transition /z/ > /r/ occurred. It is noteworthy that in the Old Turkic script, the descendant of the Imperial Aramaic 𐡎 SAMEKH /s/ does not mean /r/; see □ Š¹ /ʃ/ in *Table 3.2.2-4*. This clearly shows that the Old Turkic script was never applied in the Ogur language. The sound value of the Old Turkic □ Š¹ shows the result of the very common change /s/ > /ʃ/.

Imperial Aramaic	**Proto-Rovash**	**Early Steppean Rovash**	**Carpathian Basin Rovash**	**Szekely-Hungarian Rovash**	**Steppean Rovash**	**Old Turkic**
ᄉ, ϩ GIMEL /g/ɣ/	*(There is no occurrence in relics)*	ƛ FORKED G /g/	*(Aethicus)* ʃ, *ƛ FORKED G /g/	Λ G /g/d͡ʒʲ/	*(There is no occurrence in relics)*	ɛ G² /g/
ɿ WAW /w/oː/uː/	ƴ, } FORKED O /o/u/	*(There is no occurrence in relics)*	} OPEN O /o/u/	Ɔ O /o/u/	ƴ, ʮ FORKED O /o/u/	> O /o/u/
ǀ ZAYIN /z/	| SZ /s/	| SZ /s/	| SZ /r/s/	| SZ /r/s/	| SZ /s/	*(Orkhon)* | S² /s/
ɕ, Ʊ TETH /tˤ/, cf. *Nabataean* ʋ, ᔕ TETH /tˤ/ and *Palmyrene* Ϭ TETH /tˤ/	*(There is no occurrence in relics)*	ϭ ARCHED T /*t/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	∂ ARCHED T /t/	ɜ, ẟ T¹ /t/
ᐊ YODH /j/iː/eː/	˥ ANGLED I /ï/i/e/	Γ, *˥ ANGLED I /*i/*ï/*e/	Γ ANGLED I /i/	˥ J /i/j/	Γ ANGLED I /i/e/	*(Orkhon)* Γ I /i/ï/e/
ʄ, ɿ KAPH /k/x/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	⋟ FORKED K /k/	*(Orkhon)* ɿ, ⱹ K² /k/, *(Yenisei)* ϒ K² /k/

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[84] Róna-Tas 1991a, p. 28

[85] Vásáry, István 2010–2011: *Personal communication*

Imperial Aramaic	Proto-Rovash	Early Steppean Rovash	Carpathian Basin Rovash	Szekely-Hungarian Rovash	Steppean Rovash	Old Turkic
ϒ,) NUN /n/	Ↄ N /n/, ϟ, Э FORKED N /n/	Ↄ N /n/	Ↄ N /n/ɲ/; ϒ NG /ŋ/	Ↄ N /n/ɲ/	Ↄ N /n/; ϒ NG /ŋ/; Ẍ, ϟ FORKED N /n/	*(Orkhon)* Ↄ N¹ /n/, ⊦ Ṅ /ŋ/
ℷ, ◘ SAMEKH /s/	▯ CLOSED R /r/	▯ CLOSED R /r/*s/	▯ CLOSED R /r/	*(There is no occurrence in relics)*	▯ CLOSED R /r/	▯ Š¹ /ʃ/
Ƥ, P, Ƥ QOPH /q/	β ARCHED K /k/	*(There is no occurrence in relics)*	β ARCHED K /k/, Δ SHARP K /k/	Δ SHARP K /k/	*(There is no occurrence in relics)*	*(Orkhon)* ᛔ, β ÖK /k/ (after or before /ø/y/), *(Orkhon)* ᚺ K¹ /q/
	(There is no occurrence in relics)	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(Orkhon)* ◁ ÏQ /ïq/qï/, *(Yenisei)* ▷ ÏQ /ïq/qï/
Ч RESH /r/	Һ SHARP R /r/, H R /r/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	H R /r/	♭ SHARP R /r/	*(Orkhon)* Ч R¹ /r/
ש, Ѱ SHIN /ʃ/	Ψ ZS /ʃ/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	Ψ ZS /ʃ/ʒ/	Ψ ZS /ʃ/	Ƴ IČ /it͡ʃ/t͡ʃi/t͡ʃ/
ɲ, Ɗ TAW /t/θ/	*(There is no occurrence in relics)*	λ FORKED T /t/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	λ FORKED T /*t/	*(Orkhon)* h T² /t/
	Ɗ CLOSED T /t/,	*(There is no occurrence in relics)*	Ɗ CLOSED T /t/	(*There is no occurrence in relics*)	*(There is no occurrence in relics)*	(*There is no occurrence in relics*)

Table 3.2.2-4: Influence of the Imperial Aramaic on Rovash and the Old Turkic scripts

In *Table 3.2.2-4*, the glyphs of the two similar scripts of the Fertile Crescent, the Nabataean ʋ, ട TETH /tˤ/ and the Palmyrene ɓ TETH /tˤ/ are from Nyberg,[86] while the Imperial Aramaic Ɒ TETH /tˤ/ is from Segert.[87] It is noteworthy that there is not significant difference among the Imperial Aramaic, the Nabataean and the Palmyrene glyphs of the TETH /tˤ/.

The influence of Parthian script through Early Steppean Rovash is presented in *Table 3.2.2-5*. The glyphs of the Parthian letters are based on Akbarzādeh.[88]

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[86] Nyberg 1964

[87] Segert 1975

[88] Akbarzādeh 2002

Parthian	Proto-Rovash	Early Steppean Rovash	Carpathian Basin Rovash	Steppean Rovash	Szekely-Hungarian Rovash	Old Turkic
𐭁 BETH /b/w/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	Ɔ ARCHED B /b/β/	*(There is no occurrence in relics)*	*(Orkhon)* 𐰉 B¹ /b/
𐭃 DALETH /d/ð/	∩ ARCHED D /d/di/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	∩ ARCHED D /d/ð/d͡ʒ/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*
𐭇 HETH /x/h/	И, ↿ GH /ɣ/, *in Alan:* /g/,	Ꮋ GH /ɣ/, N ANGLED UE /y/	N, И GH /ɣ/	N, ↿, Ꮋ GH /ɣ/	ɥ GH /ɣ/, ≳ OPEN OE /ø/øː/y/yː/, ɥ OPEN UE /øː/y/yː/	*(Orkhon)* 𐰇 Ö /ø/y/w/

Table 3.2.2-5: Influence of the Parthian script through Early Steppean Rovash

Table 3.2.2-6 presents the influence of the Middle Persian on the Old Turkic script. Due to historical reasons, an intermediate script is supposed, which is surely the Early Steppean Rovash. The glyph of the Old Turkic ⋟ M /m/ is from Tekin.[89] The descends of the Middle Persian 𐭬, 𐭬 MEM /m/ in the Steppean Rovash and in the Old Turkic implies the appearance of this grapheme in their common ancestor, the Early Steppean Rovash. Consequently, the identical Middle Persian 𐭬 QOPH /q/ also surely existed in the Early Steppean Rovash. The glyph of 𐭬 QOPH /q/ is from Skjærvø,[90] the 𐭬 MEM /m/ from Rosenthal et al.[91]

Middle Persian	Early Steppean Rovash	Carpathian Basin Rovash	Steppean Rovash	Old Turkic
𐭩 YODH /j/iː/	D, *O CLOSED J /j/	D CLOSED J /j/i̯/ʎ/, Ø LY /j/ʎ/	D, O CLOSED J /j/	𐰖, 𐰗 Y¹ /j/
𐭬, 𐭬 MEM /m/	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(Talas)* ⋟ M /m/, *(Orkhon)* Ӈ, 𐰢 M /m/, *(Yenisei)* 𐰢 M /m/
𐭬 QOPH /q/	Ꝺ CLOSED G /g/x/	*(There is no occurrence in relics)*	Ꝺ CLOSED G /g/	*(There is no occurrence in relics)*

Table 3.2.2-6: Influence of an Middle Persian grapheme through Early Steppean Rovash

The author of this book supposes that the Middle Persian 𐭩 YODH /j/iː/ was the ancestor of the Early Steppean Rovash D, *O CLOSED J /j/ and its descendants. However, see also the concept of the Turkic ideograms *(Table 3.2.2-7)*.

Besides the Aramaic-origin graphemes, there is a concept that in the orthography of the steppean nations there are some *ideogram based symbols* (*pictogram* or *graphic logogram*, according to Amanjolov[92]), see *Table 3.2.2-7.*[93] The history of these presumably Turkic ideograms is still obscure. The author of this book claims, the *D /j/ and *Ϻ /lt/ can be derived from the Aramaic-based scripts (Middle Persian and Kharoṣṭhī, respectively); therefore – according to the Minimum Entropy Method – the presumption of their ideogram origin is unnecessary. The existence of the circle-like glyph variant (O) of the D CLOSED J makes its ideogram-based origin is less probable.

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[89] Tekin 1968

[90] Skjærvø 1996, p. 518

[91] Rosenthal et al. 1986, *Table 3*

[92] Amanjolov 2003, p. 290

[93] Thomsen 1922; Amanjolov 2003, p. 290

Presumably Turkic ideograms and their supposed meaning	Proto-Rovash	Early Steppean Rovash	Carpathian Basin Rovash	Steppean Rovash	Old Turkic
*𐰌 > *𐰋 /b/u̯/ The pictogram of /ɛb/ɛv/ 'house/home' has the shape of a dwelling, the yurt.	Ÿ RAISED B /b/, ᐅ ANGLED B /b/, X B /b/	X B /b/	𐰋 SHARP U /u̯/, X B /b/	Ÿ RAISED B /b/, ᐅ ANGLED B /b/	*(Orkhon)* 𐰋, *(Yenisei)* 𐰌, 𐰋 B² /b/u̯/
*𐰎 > *𐰍 > *ᛁ > *'ı' /ɣ/ The pictogram of /aɣ/ 'trap, snare, fishing tackle'	(*There is no occurrence in relics*)	'ı' TRIPLE GH /ɣ/	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	(*Yenisei*) 'ı', 𐰍, ᛁ, *(Orkhon)* 'ı', ᛁ G¹ /ɣ/
*D /j/ The pictogram of /jaj/ 'bow' or /aj/ 'moon', looks like the waxing half moon or a bow.	D CLOSED J /j/	D CLOSED J /j/	D CLOSED J /j/, Ø LY /j/ʎ/	D, O CLOSED J /j/	D, O Y¹ /j/
*Ϻ /lt/ The pictogram of /alt/ 'bottom' is a schematic draw of the bottom half of a man.	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	(*There is no occurrence in relics*)	Ϻ LT /lt/	Ϻ LD /ld/

Table 3.2.2-7: The concept of the Turkic ideogram-based graphemes.

The system of Early Steppean Rovash consonants and vowels in the 5th–11th/13th centuries are presented in *Table 3.2.2-8* and *Fig. 3.2.2-1*, the meaning of each phonetic feature is detailed in *Table C-3*.

Place of articulation	Plosive (voice-less)	Plosive (voiced)	Nasal	Fricative (voice-less)	Fricative (voiced)	Liquid (voiceless, lateral)	Liquid (voiced)
Bilabial	ᒣ /p/	X /b/	Ʊ ,Ȝ /m/		ᒬ /β/		
Dental					> /ð/		
Alveolar	ϭ, λ, Ӿ /t/		Ↄ /n/	l, Ϯ /s/	/z/	Λ, Ꞁ /l/	▯ /r/
Postalveolar				l/ʃ/			
Palatal					D /j/		
Velar	/k/	Ꝺ /g/	/ŋ/	Ꝺ /x/	N, 'ı' /ɣ/		
Uvular	⧗ /q/						

Table 3.2.2-8: The phonetic system of Early Steppean Rovash consonants used in the 5th–11th/13th centuries

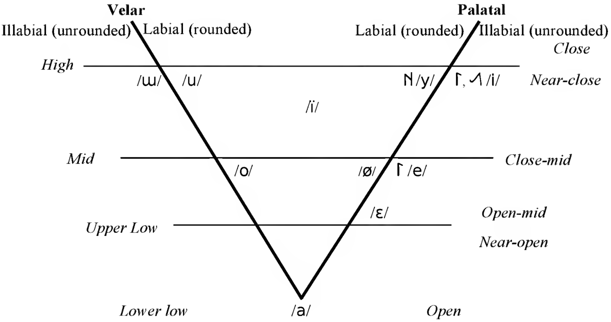

Fig. 3.2.2-1: The graphical representation of the phonetic system of Early Steppean Rovash vowels, using only some typical glyphs of each grapheme

3.3. The Rovash paleographical modeling

3.3.1. The Glyph Complexity Parameter

In the examination of the descent of the glyphs, the more complicated is a glyph topologically, the more reliable is its reachable genealogy. In order to measure the graphical complexity, the author introduced the *Glyph Complexity Parameter* (*GCP*). The GCP of a glyph is calculated based on the expression (3.3.1-1).

$$GCP = (\operatorname{sgn} N)\left(\sum_{i=1}^{N} N_i^{(E)} - 1\right) + (\operatorname{sgn} L)\left(\sum_{j=1}^{L} \left(N_j^{(L)}\right) + 1\right) + A + M + P + (S-1), \qquad (3.3.1\text{-}1)$$

where N is the number of vertices (nodes); $N_i^{(E)}$ is the number of edges connected to the i'th vertex; L is the number of the non-overlapping loops in the glyph; $N_j^{(L)}$ is the number of edges among the vertices of the j'th loop; A is the number of curved edges (arches) not belonging to any loop; M is the number of horizontally or vertically flipped (mirrored) edges; P is the number of parallel edges being in non-mirrored position, and S is the number of separated shapes in the glyph. If the edges are curved, the concentricity is considered as parallelism. The i, j, k are indices. The sign function *sgn x* is defined in (3.3.1-2).

$$\operatorname{sgn} x = \begin{cases} 1 & : \quad x > 0 \\ 0 & : \quad x = 0 \\ -1 & : \quad x < 0 \end{cases} \qquad (3.3.1\text{-}2)$$

In calculating the GCP, the collinear but nonadjacent edges or concentric arches are taking into consideration only once. E.g., the GCP of the rovash grapheme ǀ SZ, which represents the sound /s/r/, is calculated as (1+1)+0+0+0+0=2. The GCP of the Carpathian Basin Rovash grapheme ⦶ CLOSED S /ʃ/ is (3+2)+2+0+2+0=9. The GCP of ⊠ Z, the rovash grapheme of the sound /z/ used in the Szekely-Hungarian Rovash, is the following: (2+3+3+1+1+3+3+2)+(4+4)+0+2+3=31. Based on the experiences, the GCP defined by (3.3.1-1) is able to measure the characteristicness of a glyph: the higher is the GCPs of two graphemes, the more reliable is any result about their genealogical tie.

3.3.2. The glyph transformation modeling

In the paleography, the unprecedented glyphs are extraordinary. In contrast, each glyph can usually be deduced from earlier glyph in the same script or an ancestor writing system. It is noteworthy that in general, the precondition of a genealogical link between two glyphs is that their sound values must be identical of phonetically reasonably different. The vector $G^{(a)}$ should be introduced, which describe the topological features of a glyph belonging to a writing system *a*. Then, creating a new glyph $G_{new}^{(a)}$ from an older $G_{old}^{(a)}$ can be expressed with the operator equation (3.3.2-1).

$$G_{new}^{(a)} = \prod_i \left(M_i, 0 < i \leq 9\right) G_{old}^{(a)}, \qquad (3.3.2\text{-}1)$$

where the $\left(G^{(a)}(1), G^{(a)}(2)\ldots\right)$ elements of the vector $G^{(a)}$ are presented in *Table 3.3.2-1*. The M_i glyph-forming methods are listed in *Table 3.1-4*. The operators $M_i, i = 1,2,3,\ldots$ are sequentially applied any times. Naturally, the less operators have to be used to obtain the glyph $G_{new}^{(a)}$ from an older $G_{old}^{(a)}$, the stronger is the link between $G_{new}^{(a)}$ and $G_{old}^{(a)}$.

Attribute	Description
$G^{(a)}(1)$	Number of leafs (pendant vertices, vertices of degree one)
$G^{(a)}(2)$	Number of vertices of degree two
$G^{(a)}(3)$	Number of vertices of degree three
$G^{(a)}(4)$	Number of vertices of degree four or higher
$G^{(a)}(5)$	Total length of the approximately linear edges (in quarter of font height)
$G^{(a)}(6)$	Total length of the curved edges (in quarter of font height)
$G^{(a)}(7)$	Number of loops
$G^{(a)}(8)$	Total length of the approximately vertical edges (in quarter of font height)
$G^{(a)}(9)$	Total length of the approximately horizontal edges (in quarter of font height)
$G^{(a)}(10)$	Total length of the edges inclined at approximately 45 degrees to the left (in quarter of font height)
$G^{(a)}(11)$	Total length of the edges inclined at approximately 45 degrees to the right (in quarter of font height)
$G^{(a)}(12)$	Total length of the non-coincident edges flipped horizontally or vertically (in quarter of font height)
$G^{(a)}(13)$	Total length of the parallel edges being in non-mirrored position (in quarter of font height). If the edges are curved, the concentricity is considered as parallelism.

Table 3.3.2-1. The topological attributes of a glyph.

The equation (3.3.2-1) is used in clustering the possibly cognate glyphs. Namely, only that glyphs can be selected onto a set of possible cognate glyphs, for which the equation (3.3.2-1) can be applied with a reasonable small number of topological transformations.

3.3.3. Determining the genealogies of the graphemes

The derivation of the glyphs needs the comparison of their topological properties. To handle this problem algorithmically, their quantifying is necessary. Their quantification can be expressed by the difference value $\delta\left(G_1^{(a1)}, G_2^{(a2)}\right)$ of the glyph $G_1^{(a1)}$ in the writing system *a1*, and the glyph $G_2^{(a2)}$ in the writing system *a2*, see (3.3.3-1). Similarly, the difference of these two glyphs is expressed by $s\left(G_1^{(a1)}, G_2^{(a2)}\right)$, see (3.3.3-2). These expressions can be used for measuring the similarity and the difference of glyphs in the same writing system; in this case, $a1 = a2$.

$$\delta\left(G_1^{(a1)}, G_2^{(a2)}\right) = \frac{\sqrt{\frac{1}{N_G}\sum_{i=1}^{N_G} w_i \left(G_2^{(a2)}(i) - G_1^{(a1)}(i)\right)^2}}{\sqrt{\frac{1}{N_G}\sum_{i=1}^{N_G} w_i \left(\max\left(G_1^{(a1)}(i), G_2^{(a2)}(i)\right)\right)^2}} \cdot 100\%, \qquad (3.3.3\text{-}1)$$

$$s\left(G_1^{(a1)},G_2^{(a2)}\right)=1-\delta\left(G_1^{(a1)},G_2^{(a2)}\right), \qquad (3.3.3\text{-}2)$$

where the difference ($\delta\left(G_1^{(a1)},G_2^{(a2)}\right)$) of the glyphs ($G_1^{(a1)}$ and $G_2^{(a2)}$) is calculated by normalizing weighted squared average of the squared deviation of their topological attributes ($G_2^{(a2)}(1)-G_1^{(a1)}(1),\ G_2^{(a2)}(2)-G_1^{(a1)}(2),\dots,G_2^{(a2)}(N_G)-G_1^{(a1)}(N_G)$) with weighted squared average of the squared deviation of the maximal values of the same topological attributes in the case of the examined glyphs. In (3.3.3-1), the N_G means the number of topological attributes, and the weighting factors $w_1,w_2,\dots,w_i,\dots,w_{N_G}$ represent the relative importance of each attributes. The actual values of the weighting factors were determined by a heuristic method from the descent links of the graphemes known in the international paleography literature.[94] The equation (3.3.3-3) is valid for the weighting factors.

$$\sum_{i=1}^{N_G} w_i = N_G \qquad (3.3.3\text{-}3)$$

The simplification of (3.3.3-1) results (3.3.3-4).

$$\delta\left(G_1^{(a1)},G_2^{(a2)}\right)=\frac{\sqrt{\sum_{i=1}^{N_G} w_i\left(G_2^{(a2)}(i)-G_1^{(a1)}(i)\right)^2}}{\sqrt{\sum_{i=1}^{N_G} w_i\left(\max\left(G_1^{(a1)}(i),G_2^{(a2)}(i)\right)\right)^2}}\cdot 100\%, \qquad (3.3.3\text{-}4)$$

The equation (3.3.3-4) takes into account that in case of more complex shapes of glyphs the smaller differences are not significant, and oppositely, in case of the less complex shapes, even the smallest differences can be significant. In the examinations the weighting factors $(w_1,w_2,\dots,w_i,\dots,w_{N_G})$ were taken with the experiment-based values $\widetilde{W}=(2,4,9,6,1,1,4,1,1,1,1,2,2)$, and $w_i=N_G\widetilde{w}_i\Big/\sum_{i=1}^{N_G}\widetilde{w}_i$, $i=1,2,\dots,N_G$. The weighting factor w_7 expresses the importance of the number of loops. It was considered with the value 4, which is comparatively significant value. Its reason is that this is the only one weighting factor, which expresses the importance of the number of loops. Oppositely, the not closed straightforward and curved lines are taken into consideration in 6 different weighting factors: $(w_5,w_6,w_8,w_9,w_{10},w_{11})$. Similarly, the weighting factors for the quantity of the mirrored or parallel lines, and moreover, the number of vertices (w_1,w_2,w_3,w_4) has larger values $(2,4,9,6)$. The weighting factors of the three-degree an four-degree vertices (w_3,w_4) have large values $(9,6)$, since they represents the crossing points of the crossing lines in the topology of the glyphs.

Construction of each grapheme genealogical link is based on choosing that graphemes form the set of graphemes with identical or similar sound values that the expression (3.3.3-5) should be minimal.

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[94] Faulmann, 1880; Glass, 2000; Hackh, 1927

$$\sum_{i}\left(GCP_i + GCP_{i+1}\right)\left[\delta\left(G_i^{(a1)}, G_{i+1}^{(a2)}\right)\right]^2, \qquad (3.3.3\text{-}5)$$

where $G_i^{(a1)}$ represents a glyph of the writing system *a1*, which is the *i*'th element of the examined descend line; $\delta\left(G_i^{(a1)}, G_{i+1}^{(a2)}\right)$ is the difference of the *i*'th and *(i+1)*'th glyphs; and GCP_i is the complexity parameter of the *i*'th glyph in the examined descent line. The equation (3.3.3-5) is the fundamental of the novel modeling method of the genealogy of the graphemes, which takes into account their sound values and the similarity of their topology.

It is noteworthy that in the paleography, a frequently applied method examines only pairs of glyphs to decide if their writing systems (scripts) are linked or not. However, the mistake of this procedure is that it leaves out of consideration the genealogical information, which is in a larger number of cognate glyphs belonging various scripts. Oppositely, by using the method of the novel method, which is based on the minimization of the expression (3.3.3-5), the genealogical degree of all possibly cognate graphemes can be examined together. Therefore, the result obtained from the global optimization of (3.3.3-5) gives more reliable results than the pair-based local examinations. The Rovash Atlas, as a hierarchical grapheme database, contains genealogical ties according to the minimization of the expression (3.3.3-5).

3.4. The Carpathian Basin Rovash

3.4.1. Historical background

567–7th century (Early Avar Period)

In order to understand the development of the Carpathian Basin Rovash script an overview of the history of the Carpathian Basin and its nations shall be presented. *App. B* presents the timeline of the Hungarian and Carpathian Basin-related (*Map 3.1-1*) events from the time before the Avar conquest. According to Hungarian archaeological theories—especially the works of I. Kovrig—the periods of the Avar Age used in this book are the following: Early (567– ca. 650), Middle (ca. 650–710) and Late (710–822).[95] *Map 3.4.1-1* shows the territory of the Avar Khaganate up to ca. 650.[96]

The Avar population could not have been very large, since they were originally nomadic people. Moreover, a few decades earlier the Avars had to escape from the Western Turkic Khaganate, so they were obviously much fewer than the Western Turks. When the Avars occupied the Carpathian Basin (567–568), the Langobards living in the western part of the Carpathian Basin (former Roman Province of Pannonia) left the region and moved to North Italy. Under these circumstances, it seems very probable that the Avars needed to augment its population inside the Carpathian Basin, since increasing the number of subjects was a necessity for each nomadic empire. Subordinated tribes included the *Kuturgurs* (*Kutrigurs*) and *Utigurs*, different Ogur groups that arrived with the Avars in 567 and lived in the Carpathian Basin up to 635.[97] Róna-Tas also stated that at least one group of the Avars spoke Ogur.[98] Another example is the Barsels who joined the Avars between 558 and 560 (*App. B*) and went with them to the Carpathian Basin. There are topographical tracks of the Barsels, e.g. the village name Bercel (Hungary, see *Map 3.4.1-1*). The As–Alans also appeared in the Carpathian Basin; however, their migration into the Carpathian Basin has not been fully explained.

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[95] Kovrig 1963

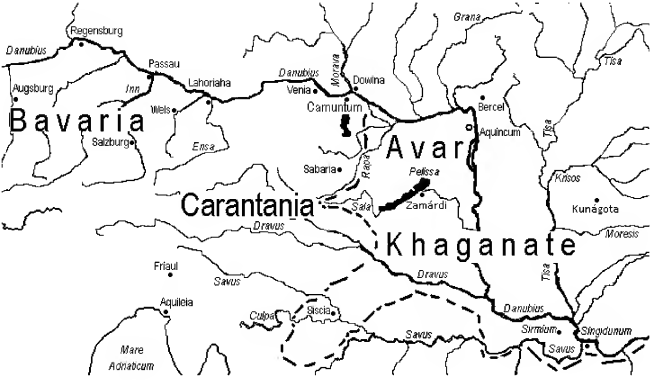
[96] Szentpéteri 1995, *Map 1*

[97] Fehér 1935, pp. 519–520; Simonyi, D. 1959, p. 238

[98] Róna-Tas 1999c, p. 272

In this age, the people named *Antes* by Byzantine sources lived east of the Carpathian Basin, and a group of them possibly moved into the Carpathian Basin. According to Soviet historian M.V. Fedorova, the Antes were of Finno-Ugric descent.[99] However, this is not a widely acknowledged opinion. The presence of a Finno-Ugric population north of the Black Sea is attested to by Soviet and Bulgarian archaeologists.[100] According to archaeologist-historian Vékony, the Penkovka archaeological culture of the wooded Steppe attributed to the Antes people[101] had strong ties to the Avar Khaganate of the Carpathian Basin.[102] It is noteworthy that in written sources there is no mention about the Antes migration. After 602, the Antes—as an individual power—disappeared forever from the chronicles.

Before the Avars, Germanic nations dominated this area up to 567 and to the East the Gepids closed the passes to the Carpathian Basin. The well-guarded Carpathian Mountains were also the eastern borders of the Avars between 567 and 602. This situation was similar to the period after 634, when Kuvrat of Great Bulgaria occupied the eastern territories of the Avars. However, between 602 and 634, the region of the Antes belonged to the Avars.



Map 3.4.1-1: The western part of the Avar Khaganate and its neighboring area between ca. 567 and ca. 650. On the map, the Roman-origin names are marked as in the medieval sources in Latin. There are some current geographical names of linguistic or archaeological interest: Bercel, Kunágota (*Sect. 7.2.6*), and Zamárdi. The map is based on archaeologist J. Szentpéteri.[103]

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[99] Федорова 1976, p. 85

[100] Smirnov 1951, pp. 10–12; Artamonov 1962, pp. 82–83; Stanchev & Ivanov 1958, p. 93; Stanchev 1956, pp. 198–199; Vaklinov 1977, pp. 28–29

[101] Rashev 1992

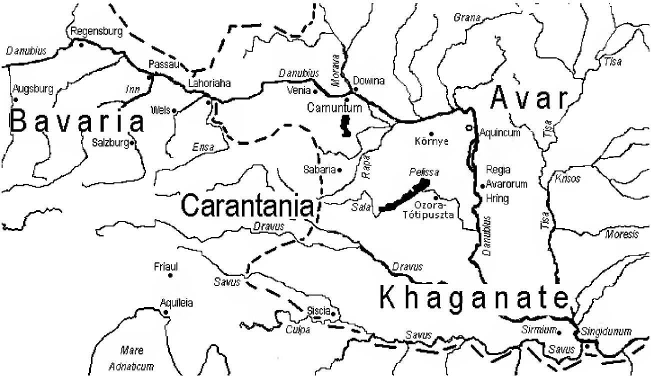
[102] Vékony 2002, p. 178

[103] Szentpéteri 1995, *Map 1*

Ca. 650 - 822 (Middle and Late Avar Periods)

In yet undetermined period, the *Onogurs,* a new nation, appeared in the Carpathian Basin.[104] This caused a socio-cultural change that can be traced in the culture and the art of the Avar Khaganate. The finds of the Onogurs are dated back to the *Middle* and *Late Avar* ages in Hungarian archaeology.[105] At that time, the Onogurs defended the country by maintaining an uninhabited and fortified military strip of land called *gyepű* /ɟɛpyː/. It functioned as a buffer zone against hostile invasions.[106] Presumably, the Avar Khaganate was already led by the Onogurs, but the name *Avar* remained in use as the international denomination of the country.

The Onogurs probably brought a special version of the Proto-Rovash script that was used in Kuvrat's Great Bulgaria. It can be demonstrated by the appearance of CBR Ð CLOSED T /t/ in the finds: in the case of 6th-7th century relics, the glyph Ð for /t/ was not used, but the CBR Ꭓ OPEN T /t/ was. *App. B* presents the history of the Carpathian Basin around the 8th century, and *Map 3.4.1-2* shows the area of the Avar Khaganate from ca. 670 to 796.



Map 3.4.1-2: The western part of the Avar Khaganate and its neighboring area between ca. 670 and 796. The map is based on Szentpéteri.[107]

According to Vékony,[108] the Hungarians with the Onogurs may have moved into the Carpathian Basin in an undetermined period, and after ca. 650, the Turkic Onogurs and the Hungarian population surely mixed and melded. Based on the rovash relics of this period (*Subch. 7.2*), Hungarian became the most significant element of the unifying language in the Carpathian Basin, since the majority of the relics of that time were already written in Hungarian (e.g., the Inscription of Környe, see *Sec. 7.2.1*). Note that the early Hungarian Chronicles described two Hungarian land acquisitions, and the first of these was dated to 677 or 700.[109]

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[104] Bóna 2001–2002

[105] Garam 1978, p. 117

[106] Czeglédy 1976, p. 87

[107] Szentpéteri 1995, *Map 1*

[108] Vékony 2002, p. 178

The Onogurs in the Carpathian Basin were not identical to the Danubian Bulgars (also called *Onogundurs*) of Esperükh, as their names of the highest rank indicate: the rulers of the Avars and then the Onogurs of the Carpathian Basin were called *khagan*, while the rulers of the pre-Christian Danubian Bulgaria were undoubtedly *khan*. The other title of the Bulgar ruler according to epigraphic evidence (attested to between 822 and 836) was *k(h)anasybigi*.[110]

As for naming, even since the 1960s, researchers—Pritsak,[111] Boba,[112] Király, Róna-Tas and others—have shown the genealogy of the Magyars' international name, '*Hungarian*'. Namely, it starts from the ethnic name *Onogur* >Slavic /ɔ̃gŭr-/[113] >Slavic *Ungri* >German *Ungri >Ungar >Ungari >Ungere >Unger,* Latin *Ungari >Ungarii*, Italien: *Ungheri*, French **Ungre >Ongre >Ongrois* and *Hungre >Hongrois* >English *Hungarian*.[114] The word 'Onogur' was used to name the Onogurs living in the Carpathian Basin, not the Onogurs of the 5th–6th centuries living in Eastern Europe, as was believed earlier.[115] According to Róna-Tas, the original name of this nation was *Onugur* and not *Onogur*. The East Slavic adoption of this word was *ongor* that changed to > *ungor* > *ugor*. Another East Slavic form is the *ugrin*.[116] The West Slavic languages used the *ongar* (> *ungar*) form, which is believed to be the origin of the German word *Ungar*.

The Hungarian language incorporated several Onogur loanwords since the period from the mid-5th to the 8th centuries, proving the long coexistence and interference of these languages. However, Györffy showed that in some places, even in the 10th century, an Ogur-type (Onogur) language was in use in Eastern Hungary.[117] These Onogurs merged later with the unifying Hungarians.[118]

The result of the merging of Onogurs and Hungarians can be observed in the ethnic map of the Hungarian Kingdom in the 11th century (*Image D-4*). This map shows almost only Hungarian (no Onogur, Avar, etc.) population throughout the country. Linguist P. Király demonstrated that the name *Ungarus* and its versions originating from the name *Onogur* are listed several times in the Western sources around the 8th century.[119] Linguist E. Zelliger showed that the various forms of the name *Ungarus* occur in several geographical names in Austria.[120] Consequently, a significant part of the population (or its leading group) in the Avar Khaganate was called Onogur at that time. A reason for that might be the adoption of the name of the rulers by the whole nation.

Period from the 9th to the 11th centuries (Carolingian and Early Arpadian Periods)

In the 8th century, Carpathian Basin Rovash was widely used in the Carpathian Basin, according to archaeological finds. However, in the western areas occupied by the Frankish Empire in 897, Carpathian Basin Rovash was gradually abandoned and replaced by its descendants: Szekely-Hungarian Rovash and, from 863, the Glagolitic scripts. Conversely, in the southeastern part of the Carpathian Basin occupied by the Danubian Bulgars in 803, Carpathian Basin Rovash remained in use and survived until the 11th century. *App. B* presents the dates related to the history of Carpathian Basin Rovash after the collapse of the Avar Khaganate at the end of the 8th century.

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[109] Zelliger 2010a, p. 283, cf. Gyula László and several others

[110] Stepanov 2007, p. 363

[111] Pritsak 1976

[112] Boba 1967; Boba 1982–83

[113] Zoltán 2008, pp 355–358

[114] Harmatta 1997a, pp. 119–140

[115] Király 1977; Róna-Tas 1995, p 203; Róna-Tas 1988; Róna-Tas 1991b; Erdélyi 1982, pp. 25–26; Németh, A. 1999

[116] Róna-Tas 2001, p. 16

[117] Györffy 1990, p. 57

[118] Vásáry 2003

[119] Király 2006, p. 146

[120] Zelliger 2010a, p. 283–295; 2010b: 153-164

3.4.2. Evolution of CBR—Stage 1: The roots

Based on archaeological finds, the use of Carpathian Basin Rovash from the 6th or the 7th century onwards has been proved (*Subch. 7.2*). A significant majority of the Carpathian Basin Rovash textual relics are written in Hungarian. However, there are inscriptions also in Common Turkic (surely Eurasian Avar) from the 7th century, Ogur (surely Onogur) from the 6th/7th–10th/11th centuries, and As–Alan and Slavic from the 10th/11th century (*Subch. 7.2*).

The following section examines the Carpathian Basin Rovash graphemes found in Carpathian Basin Rovash relics exclusively. There is one grapheme in Carpathian Basin Rovash, namely the 𐲯 OPEN Z /z/, of which the closest relative is the Phoenician 𐤎, 𐤎 SEMK /s/ (*Table 3.4.2-1*).

After borrowing the Phoenician 𐤎, 𐤎 SEMK /s/, probably the phonetic change /s/>/z/ happened in the languages where this grapheme was used. A similar phonetic transition is known in the history of the Turkic languages: Vásáry showed that the transition /s/ > /z/ is possible in the middle or the end of the Turkic words, e.g. /kasar/ > /kazar/.[121] However, this change could happen in other languages as well. Consequently, this phonetic transition does not identify the language of the people who used the grapheme descendants of the Phoenician 𐤎, 𐤎 SEMK /s/.

Phoenician	Early Aramaic	Carpathian Basin Rovash
𐤎, 𐤎 SEMK /s/	𐡎 SEMKATH /sˤ/	𐲯 OPEN Z /z/

Table 3.4.2-1: Influence of the Phoenician or the Early Aramaic script on CBR.

The influence of the Kharoṣṭhī script on CBR is presented in *Table 3.4.2-2*. For historical reasons, the Kharoṣṭhī elements in CBR are probably the heritage of the people who migrated from Middle Asia where the Kharoṣṭhī script was in use (*App. B*). In the organic development of the Kharoṣṭhī 𐨮 SSA /ṣa/ > CBR 𐲤 CLOSED S /ʃ/ the script evolution principle *Closer-shape forming* (*Table 3.1-3*) can be identified. The glyphs of the Kharoṣṭhī letters are from Salomon.[122] It is very probably that the Kharoṣṭhī script affected the Carpathian Basin Rovash through the Early Steppean Rovash and then the Proto-Rovash.

Kharoṣṭhī	Carpathian Basin Rovash
𐨐 KA /ka/	𐲔 OPEN K /k/
𐨮 SSA /ṣa/	𐲤 CLOSED S /ʃ/

Table 3.4.2-2: Influence of the Kharoṣṭhī script on CBR surely through the Early Steppean Rovash due to historical reasons.

3.4.3. Evolution of CBR—Stage 2: Development in the 7th–9th centuries

After the 7th century, the Carpathian Basin Rovash started its individual evolution (*Table 3.4.3-1*). This process can be observed by the CBR 𐲏 SHARP H /x/ derived from the CBR 𐲩 SHARP CH /x/. The calligraphic version of 𐲩 SHARP CH /x/ is Aethicus' *hethmy* grapheme ƕ° (*Table 7.2.7-2*). The glyph of ƕ° SHARP CH /x/ was published by Wuttke.[123]

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[121] Vásáry, István 2010–2011: *Personal communication*

[122] Salomon 1998, p. 49

[123] Wuttke 1853

Earlier Carpathian Basin Rovash or Proto-Rovash grapheme	Later Carpathian Basin Rovash grapheme
*ℷ /*p/	*(Aethicus)* ϯ, ℷ FORKED P /f-/p/
(Aethicus) ᓭ, *ʎ FORKED G /g/	╱ SIMPLE G /g/
ᛦ, *(Aethicus)* ᖶ SHARP CH /x/	⇞ SHARP H /x/
D CLOSED J /j/	D CLOSED J /j/i̯/ʎ/ > *(Aethicus)* Ø LY /j/ʎ/
Ↄ N /n/	Ↄ N /n/ɲ/
Φ, *(Aethicus)* ᕦ CLOSED S /ʃ/	Ꝋ CLOSED S /ʃ/
ᖷ OPEN Z /z/	ᖷ, ᖷ, ᖷ OPEN Z /z/

Table 3.4.3-1: The development of the Carpathian Basin Rovash in the 7th–8th centuries

It is highly probable that Carpathian Basin Rovash was used by the Avars and Onogurs and only adapted to Hungarian in the 6th or 7th centuries. The developments of ℷ FORKED P /f-/, Ↄ N /n/ɲ/, and ᖷ, ᖷ, ᖷ OPEN Z /z/ prove the existence of a Hungarian-speaking population in the Carpathian Basin, especially because in the Turkic language, there was no /f/, and /ɲ/ appeared only sporadically. Moreover, the Ogur languages did not have a /z/, unlike Hungarian.

The comprehensive phonetic system of Carpathian Basin Rovash, consonants and vowels, are presented as follows. In some cases, the glyph variants denoting the same phoneme are listed next to each other; however not all glyph variants are included in the tables. *Table 3.4.3-2* shows the Carpathian Basin Rovash consonants, where the left-hand-side grapheme in the cell is *voiceless* and the right-hand-side one is *voiced*. This representation is based on the linguistic system of the consonants in Hungarian (*Table C-1*).[124] In the 8th century, I SZ was used for /r/ and /s/; however, later it was exclusively used for /s/, and another grapheme was applied for /r/: □ CLOSED R (*Sec. 7.2.8* and *9*). In the Ancient Hungarian linguistic period, the /d͡ʒʲ/ voiced palatal affricate already existed;[125] however, its symbol in CBR has not been found in any of the known relics. Probably, it was denoted by the ligature ᛘ in the Szarvas Relic (see *Sec. 7.2.8*).

Place of articulation	Plosive	Nasal	Fricative	Affricate	Ap-proxi-mant	Liquid
Bilabial	ᒣ,*ℷ /p/ X /b/	ʒ /m/	ℸ /β/			
Labiodental			ℷ /f/			
Alveolar	ᘐ /t/ > /d/	Ↄ,ᑐ /n/	I /s/ ᖷ /z/			ꓫ,ↄ /l/ I,□ /r/
Postalveolar			Φ,Ꝋ /ʃ/	*ㅂ,Π /t͡ʃ/		
Palatal or palatalized		Ↄ /ɲ/	D,Ø /j/	/d͡ʒʲ/		D,Ø /ʎ/
Velar	ᛋ /k/ *ʎ,╱/g/	Y /ŋ/	ᛦ,⇞ /x/ N /ɣ/		ᛪ /u̯/	
Uvular	8 /q/					

Table 3.4.3-2: CBR consonants used in the 8th century, organized according to their phonetic values (the meaning of each feature is detailed in *Table C-3*).

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[124] E. Abaffy 2003a, p. 122; 2003b, p. 316

[125] Zelliger, Erzsébet 2010–2011: *Personal communication*

Carpathian Basin Rovash relics (*Subch. 7.2*) support the statements by historical linguistics. For instance, the consonant /f/ was used only in the word-beginning position in Hungarian.[126] The Rovash Relic of Szarvas (*Sec. 7.2.8*) is in accordance with this scientific fact, since the relic contains ⅃ FORKED P /f-/ in the beginning of the word ǀʘ⅃ /fᵋʃᵋs/ 'unstitches'. Similarly, in Hungarian /g/ occurred only in the middle of the word.[127] This is also supported by two examples on the Relic of Szarvas (*Table 7.2.8-1*). The sound /ɣ/ can appear either in the middle of the word or at the end of the word, and /z/ was used only in the middle of the word during the end of the Ancient and even in the beginning of the Old Hungarian periods. *Fig. 3.4.3-1* presents the Carpathian Basin Rovash vowels in their phonetic system. According to Zelliger, the identical symbol for /a/ɛ/ and /e/ is questionable due to their phonetic difference.[128] However, Zelliger emphasized that in some Hungarian dialects, the /ɛ/ and /e/ sounds are not differentiated. Zelliger stated that the common grapheme of the /ɛ/ and /e/ sounds can imply the earlier occurrence of a dialect known in later time.[129]

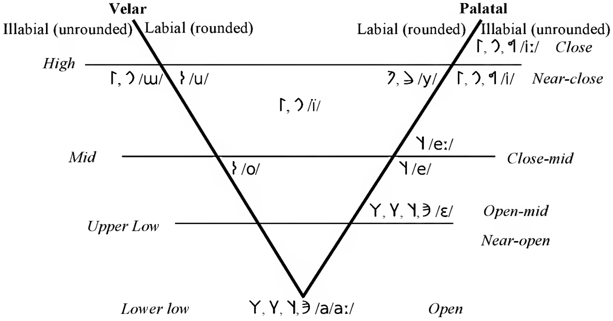

Fig. 3.4.3-1: The graphical representation of CBR vowels used in the 8th century

3.4.4. Evolution of CBR—Stage 3: Development in the 10th–11th centuries

The influence of the Cyrillic script on Carpathian Basin Rovash is presented in *Table 3.4.4-1*.[130] For historical reasons, only the early versions of the Cyrillic graphemes[131] have to be taken into account in this case. The Cyrillic script was developed sometime between 893 and 927; therefore, the adoption of the Early Cyrillic Ѫ YUS (Онъь) /ɔ̃/ grapheme into CBR as ᛟ TRIPLE O /ɔ̃/, had to happen after this time. This fact helps in determining the age of some Carpathian Basin Rovash inscriptions on the Treasure of Nagyszentmiklós (*Sec. 7.2.9*). The reason for borrowing the Early Cyrillic Ѫ YUS (Онъь) /ɔ̃/ was that Carpathian Basin Rovash was used for Slavic as well, and previously there had not been any grapheme for /ɔ̃/ in CBR. The appearance of the Slavic language is surely related to the Bulgar rule of the Southeast Carpathian Basin (*App. B*), as at that time the Bulgars had already adopted the Slavic language. This can be demonstrated by the Slavic names of the Bulgar fortresses, e.g. Visegrad or Cernigrad (present-day Visegrád, Hungary) on *Map 3.6.1-2*. The city Cernigrad is the present-day Csongrád (< /t͡ʃerni grad/ 'black castle', Hungary).[132]

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[126] E. Abaffy 2003a, p. 118, 121

[127] E. Abaffy 2003a, p. 123

[128] Zelliger, Erzsébet 2010–2011: *Personal communication*

[129] Zelliger, Erzsébet 2013: *Personal communication*

[130] Róna-Tas 1996a, p.338

[131] Карский 1979

Early Cyrillic	Carpathian Basin Rovash
Ѫ YUS (Onsь) /ɔ̃/, (*old name:* ѫсъ /ɔ̃sŭ/) /ɔ̃/	ᛟ TRIPLE O /ɔ̃/

Table 3.4.4-1: The influence of the Early Cyrillic script on CBR

Image D-4 shows the map and important historical events of the Hungarian Kingdom in the 11th century and some of the locations where Carpathian Basin Rovash relics were found. The last relic of Carpathian Basin Rovash from the 11th century (Torja, *Sec. 7.2.10*) shows a new rovash grapheme (*Table 3.4.4-2*).

Glyph-forming methods	Applied script evolution principles in the development of Carpathian Basin Rovash grapheme	Resulting grapheme
Line merger, Slight modification	**Writing technology:** Presumably, the ß ARCHED K /k/ was modified by merging the close parts of the two arched lines in the middle of the glyph. The other parts of the two arched lines were straightened and partly merged. Presumably, the reason for its modification was that the straightforward lines of Ⱥ SHARP K were easier to carve. Its survived example is the Torja Relic (*Sec. 7.2.10*).	Ⱥ SHARP K /k/

Table 3.4.4-2: The evolution of CBR not later than the 11th century.

After the 11th century, there is no known Carpathian Basin Rovash relic.

3.5. The Steppean Rovash

3.5.1. Historical background

Steppean Rovash was used primarily in the Eurasian Steppe, including Khazar Khaganate (after the mid-7th century to 965) by its constituent nations and tribes and the Onogur-Bulgars in the Volga Bulgaria.[133] The known relics are mainly in *Turkic* languages (*Common Turkic* and *Ogur* groups) and in *As–Alan* (*Preossetian*) languages.[134] The first known Steppean Rovash relic is from the first third of the 8th century (Jitkov, *Fig. 8.2.1-1*). The script was used up to the fall of the Khazar Khaganate in the 960s. *App. B* lists some important dates and historical events related to the Khazars.

According to Turkologist Róna-Tas, the ethnic name *Khazar* ultimately stems from the ancient Roman title *Caesar*, through Middle Iranian mediation.[135] The Iranian name *Kesar* passed over to the Turkic-speaking peoples where *Kesar* became *Khasar*, and this title survived as both an ethnic name and a personal name.[136] The ethnic name evolved from the expression "*Khasar's people*".

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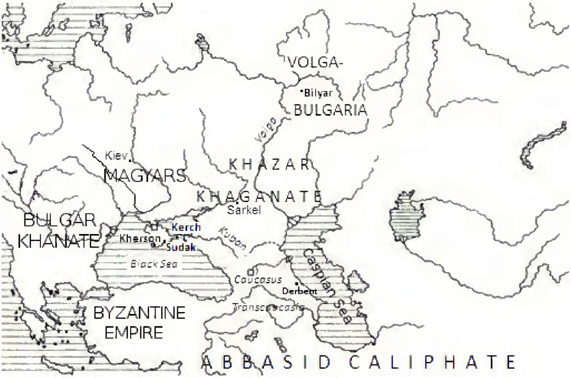
[132] Kniezsa 1963, p. 33; Bóna 2001–2002

[133] Vásáry 2003

[134] Kyzlasov, I.L. 1994

[135] Róna-Tas 1982a, pp. 349–390; Róna-Tas 1983, pp. 126–133; Róna-Tas 1993, p. 23; Róna-Tas 1995, pp. 49–80 & 95–102

Numerous nations and tribes belonged to the Khazar Khaganate, including: *As–Alans* (Iranian-speaking nations), *Ogurs* and *Common Turkic* speaking nations.[137] Based on the Steppean Rovash relics in the Khazar language, according to Vékony, Khazar belonged to a Common Turkic language group and to the Kypchak language subgroup.[138] The state system of the Khazar Khaganate was a dualistic kingdom: the prime ruler was a god-like spiritual leader, and the vice-king acted as an executive ruler. *Map 3.5.1-1* shows the territory of the Khazar Khaganate and its surroundings.



Map 3.5.1-1: Khazaria and its neighbors in the 9th century. The map is based on Zelev.[139]

In the 9th century, after a lost civil war, Khazarian rebels joined the *Magyars* (*App. B*). Their name in a Bavarian yearbook is *Cowari*[140] and in a Greek source (Constantine Porphyrogenitus) is *Κάβαροι*.[141] According to Róna-Tas the correct reading of the Greek version is *Kavari*, therefore in this book they are called *Khavars*, not *Khabars*.[142] Vásáry also supported the form /kavar/ being more probable than /kabar/.[143] The language of the Khavars was a dialect of Khazar—according to Vékony.[144]

The Magyars and the united Khavars were led by the Grand Prince Álmos /aːlmoʃ/, and then together they completed the Magyars' Land Acquisition in 894–902 AD under the leadership of the

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[136] Róna-Tas 1999a, p. 228

[137] Fodor 1999; Fodor 2004, p. 57

[138] Vékony 2004a, p. 280

[139] Zelev 2009

[140] Vásáry 2003

[141] Constantine Porphyrogenitus, 948–952

[142] Róna-Tas 1996a, p. 273

[143] Vásáry, István 2010–2011: *Personal communication*

[144] Vékony 2002, p. 185

Grand Prince Árpád /aːrpaːd/, son of Grand Prince Álmos (*App. B*).[145] Later on, the Khavars adopted Hungarian and took part in forming the unified Hungarian nation.[146]

3.5.2. The roots and development of Steppean Rovash

Steppean Rovash had some variants used in different geographical areas (*Map 8.2-1*). One version existed in the area between the North Caucasus and the Kuban River (e.g., Khumara Building Inscription, *Sec. 8.2.4*) and another in the region between the Volga and Don rivers (e.g., Mayaki, *Sec. 5.2.1* and Stanitsa Krivyanskoe, *Sec. 5.2.3*). However, these cannot be considered as individual scripts.[147] Some further relics found outside of these areas also belong to the Steppean Rovash, e.g., Achik-Tash Inscription from the Talas Valley (*Map 8.2-1*), and the Kievan Letter (*Sec. 8.2.9*).

Steppean Rovash evolved directly from Proto-Rovash but also had direct connections to the Early Steppean Rovash (*Fig. 3.1-1*). Steppean Rovash was influenced by other scripts as well. Borrowing graphemes for sound values represented by already-existing Steppean Rovash graphemes can be justified by Rogers' model of borrowing writing systems. Namely, Rogers stated that reasons for borrowing graphemes were sometimes social in nature.[148] Therefore, the influence of the Middle East cultures lead to borrowing graphemes. *Table 3.5.2-1* shows the influence of the Imperial Aramaic script on Steppean Rovash. It is very probably that the Imperial Aramaic script affected the Steppean Rovash through the Early Steppean Rovash.

Imperial Aramaic	**Steppean Rovash**
(6th c. BC) 𐡄, *(4th c. BC)* 𐡄 HE /h/	>, ᘉ FORKED CH /x/

Table 3.5.2-1: The probably indirect influence of the Imperial Aramaic script on the Steppean Rovash. The dates of the different versions of the Imperial Aramaic HE are based on Schniedewind.[149]

Table 3.5.2-2 presents the influence of Parthian script on Steppean Rovash. The glyph of the Parthian letter is from Akbarzādeh.[150]

Parthian	**Steppean Rovash**
𐭒 QOPH /q/	ᑕ OPEN Q /q/

Table 3.5.2-2: The influence of Parthian script on Steppean Rovash.

3.5.3. The phonetic system of the Steppean Rovash

The system of Steppean Rovash consonants and vowels in the 9th–10th centuries are presented in *Table 3.5.3-1* and *Fig. 3.5.3-1*. The meaning of each phonetic feature is detailed in *Table C-3*.

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[145] Erdélyi 1983a

[146] Vékony 1996

[147] Vasil'ev 2005

[148] Rogers 1999, p. 252

[149] Schniedewind 2006, p. 140

[150] Akbarzādeh 2002

Place of articulation	Plosive (voice-less)	Plosive (voiced)	Nasal	Fricative (voice-less)	Fricative (voiced)	Affrica-te (voi-celess)	Affrica-te (voi-ced)	Liquid (voice-less, lateral)	Liquid (voiced)
Bilabial	1, ⅃ /p/	⋟, Ɔ, Ÿ /b/, Ꞁ /b-/	ɜ /m/		Ꞁ /β/				
Dental					∩, > /ð/				
Alveolar	∂, Ҳ /t/	∩ /d/	Ↄ, ч, ʮ /n/	I, Ϯ /s/	Ӿ /z/			ʖ /l/	h, ♭, ∩, ▯ /r/
Post-alveolar				Ɖ, Ψ /ʃ/		Ꞑ /t͡ʃ/	∩ /d͡ʒ/		
Palatal					D /j/				
Velar	⋟ /k/	ϑ /g/	Y /ŋ/	> /x/	N /ɣ/				
Uvular	Ɗ, ⧗, 8 /q/								
Laryngeal (glottal)				ᛸ /h/					

Table 3.5.3-1: The phonetic system of Steppean Rovash consonants used in the 8th–10th centuries

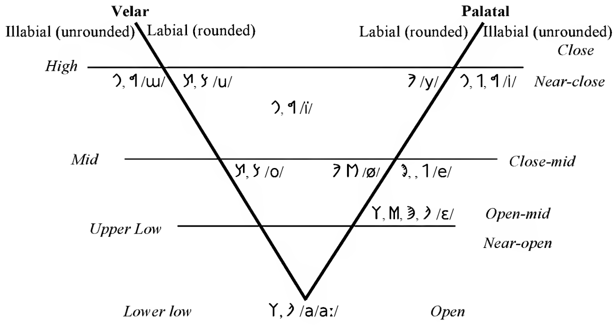

Fig. 3.5.3-1: The graphical representation of the phonetic system of Steppean Rovash vowels used in the 8th century, using only some typical glyphs of each grapheme

3.6. The Szekely-Hungarian Rovash

3.6.1. Historical background

The period between the 8th century and 805

To understand the circumstances of the evolution of Szekely-Hungarian Rovash, it is necessary to highlight the historical background of the Carpathian Basin. In the Frankish–Avar wars between 788 and 797 (*App. B*), the Avar Khaganate had no serious population loss. Szalontai proved that a large number of Avars survived the wars in the Carpathian Basin, including in the area of Pannonia.[151] Therefore, at the end of the 8th century, the population composition of the Carpathian Basin could have been very similar to that at the end of the 9th century.[152] As described in *Sec. 3.4.1,* a significant portion of the population in the Carpathian Basin spoke Hungarian during this period.

Starting in the 8th century, there was strong Christian missionary activity in the present-day territories of the Austria, Germany and the Czech Republic after the Franks conquered those areas. From the end of the 8th century, when the Frankish Empire occupied a part of the former Pannonia (*Image D-3*), evangelization started there also. The occupied territory was near *Carantania* (present-day Carinthia in Austria, see *Map 3.6.1-1*), the starting point of the missionary activities to these areas in the 9th century (*App. B*).

In 796, Frankish bishops met near the Danube, somewhere in Pannonia in order to discuss the concept of the evangelization of the newly formed Frankish province Pannonia.[153] The central topic of this meeting was the conditions and prerequisites of baptism. The participants expressed the importance of following the customs of the Christian Church and they described the main stages of conversion, namely (*i*) *fides docenda* 'founding religious instruction', (*ii*) *baptismi sacramenta percipienda* 'baptism', and (*iii*) *evangelica praecepta tradenda* 'evangelizing'.[154] The reason for the bishops' meeting was the bitter experience of previous conversions in other countries, where the illiteracy of the local population built a serious barrier to evangelization.[155] Illiteracy was also a problem in the Frankish Empire during that time and was the background of Charlemagne's order, titled *De litteris colendis (App. B)* as well. Therefore, the participants of the meeting dealt with the problem of illiteracy as well.

A historical relic, the set of Freising Manuscripts contains formulas of confession translated from Old High German to Western Slavic (previously there was strong evangelization in Slavic-speaking Carantania). This is evidence that for improving the effectiveness of conversion, the missionaries of Salzburg used the native language of the inhabitants in prayers but not in the liturgy.[156] Similarly, in the beginning of the 9th century, the conversion of the population in Pannonia needed to use an alphabet appropriate for describing the prayers in Hungarian. The Hungarian linguistic research showed that the Christian terminology of the Hungarian language originated significantly from Western Slavic and Old High German, which is in accordance with the concept mentioned above.[157]

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[151] Szalontai 1984–1985, pp. 469–470

[152] Szőke 1999b, pp. 94–95

[153] Szádeczky-Kardoss 1998, pp. 291–292

[154] Veszprémy 2004, p. 60

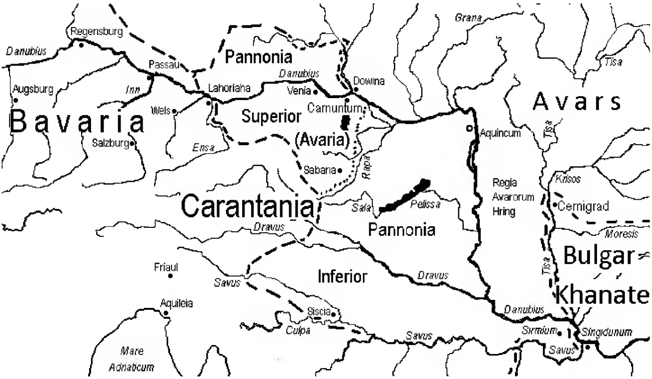
[155] Veszprémy 2004, p. 59

[156] H. Tóth 2007, pp. 30–31

[157] H. Tóth 1996, pp. 77–78

The period between 805 and 828

In 805, an important event happened: the Christian-named *Theodorus Capcan* asked Charlemagne for an area in the Frankish Empire for his nation (in sources *'Huns'*). Theodorus Capcan asked for land for living, which was a typical Steppean custom known from the history of the Magyars' Land Acquisition (894–902) as well. According to the archaeologist B.M. Szőke, Theodorus obtained the Danube Valley between the Ybbs River and "*inter Sabariam et Carnuntum*".[158] Carnuntum is currently between Petronell and Deutsch-Altenburg (Northeast Austria). The city of Sabaria is the present-day county seat Szombathely (Hungary). Very probably, this area was also called *Avaria (Avar March)*, established by Charlemagne in the northern part of the Frankish province Pannonia (*Pannonia Superior*, *Upper Pannonia*); see *Map 3.6.1-1.*[159]



Map 3.6.1-1: The western part of the Carpathian Basin between 805 and 828. The map is based on Szentpéteri and Szőke.[160] Note that the eastern and southeastern borders of the Frankish Empire are uncertain.

Archaeologist-historian G. Vékony assumed that this nation was different from the inhabitants of the Carpathian Basin, that they originated from the Onogur Bishopric at the Sea of Azov (near Crimean Peninsula); and the people of Theodorus were Christian.[161] The Turkic title *capcan* /qapɣan/, meaning *conqueror,* is a "speaking" name in this case,[162] a *throne name* used as an honorary title.[163] Note that in the sources, the title *capcan* had not been known in the Avar Khaganate before 805, but as an honorary title it was used in the Second Turkic Khaganate by Khagan *Elterish* and his successor Khagan *Qapagan Bögü (Mo-cho)* (*App. B*).[164] Theodorus Capcan was khagan as well, like his son *Abraham*. *App. B* lists the supposed historical milestones in this period.

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[158] *Annales regni Francorum*, ad. a. 805. MGH SRG, p. 119

[159] Bóna 1985, pp. 154–156; Bowlus 1978, pp. 3–26

[160] Szentpéteri 1995; Szőke 2000, pp. 336-337; 2004, pp. 185–186

[161] Vékony 1992c, pp. 448–449

[162] Vékony 1981a, p. 77; Vékony 1992c, p. 447

[163] Vékony 1981b, p. 223

[164] Harmatta 1994, pp. 149–164

The name *Theodor* was frequently used in the Eastern Christian Church, which was popular among the Goths as well. The Onogurs who lived in the Crimean Peninsula were in connection with the Crimean Goths (*App. B*). Conversely, the Christian name "Theodorus" was not frequently used by the Frankish missionaries, therefore it is probable that *Theodorus Capcan* was originally baptized near the Black Sea. So, probably their Christianity originated from the East. According to Vékony's written sources (Frankish Annals),[165] the son of Theodorus, Abraham, was already baptized. However, he might have been rebaptized in the court of Charlemagne based on the principles accepted by the bishops of the Frankish Church in 796 (*App. B*). In the Carolingian period, baptism did not necessarily entail taking up a new name. There are examples in the sources for using pagan names even after baptism because in the western Christian baptismal formula ("*Ego te baptizo in nomine Patris et Filii et Spiritus sancti*") the name of the baptized was not mentioned.[166] For instance, the chieftains *Priwina*, *Rastislaw*, and *Swentopluk* were mentioned in the sources according to their pagan names—these names did not change during their baptism. In the court of Priwina (Mosaburg, see *App. B* and *Map 3.6.1-2*), the name *Unzat* was mentioned in the sources.[167] According to Dopsch, *Unzat* and *Chezil* were sons of *Priwina* (*App. B*).[168] Note that *Unzat* is not an Indo-European name.[169]

The name *Abraham* was also not given during baptism, but it attests to the Eastern Christian traditions in the family of Theodorus Capcan. Accordingly, the people of Theodorus Capcan very probably came from the East (of the Carpathian Basin) and they may not have been Avars, but rather Onogurs.[170]

The period between 828 and 894

After 828, the territory between the middle and the lower part of the Rapa River (present-day Raba River in Hungary) and the areas occupied by the Bulgar Khanate was outside of any governmental system. It was called *Avarorum solitudo* (*Map 3.6.1-2*), that means 'Region of Unsettled Avars'. Accordingly, it was inhabited by semi-nomadic people and functioned as an uncontrolled buffer zone between the Frankish Empire and Bulgar Khanate.[171] At the same time, the eastern borders of the Frankish Empire where secured along the Rapa River, and the activity of the Frankish Church was restricted to west of the Rapa River.

The eastern border of the Frankish Empire (*Map 3.6.1-2*) divided the land of the Hungarian population in Pannonia. Their reunification was led by the land-acquiring Magyars at the end of the 9th century (*App. B*). Linguistic evidence of this is the fact that even today there is a so-called *West Transdanubian Dialect* of the Hungarian language. In addition, the region of this dialect is mainly the same territory that belonged to the Frankish Empire in the 9th century.

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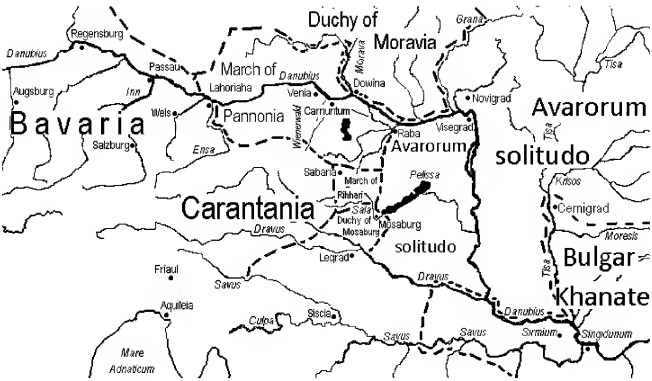
[165] Vékony 1981b, p. 224
[166] Vékony 1981b, p. 224
[167] Wolfram 1979, p. 132
[168] Dopsch 2002, p. 270
[169] Vékony 1981b, p. 224
[170] Vékony 1992c, p. 447
[171] Olajos 2001, p. 53; Szenthe, Gergely 2010: *Personal communication*



Map 3.6.1-2: The West Carpathian Basin and the neighboring areas between 840 and 894. The map is based on Szentpéteri, Vékony, Szőke, and Fodor.[172] The former Avaria was named March of Pannonia in that time. Note that the eastern and southeastern borders of the Frankish Empire are uncertain.

From the 10th century

Archaeologist-historian Erdélyi stated that the population in the Carpathian Basin significantly outnumbered the land-acquiring Magyars of the Grand Prince Árpád in the late 9th century.[173] Numerous scholars claim that mostly Hungarian-speaking people lived in the Carpathian Basin before the arrival of the Magyars. The Hungarians of the Carpathian Basin joined the Magyars and participated in their fights according to the traditions of the Szekelys and the medieval Hungarian chronicles.[174] In later sources, this Hungarian population was called *Szekelys* /seːkeʎs/.

Independently from the Magyars' Land Acquisition, Szekely-Hungarian Rovash remained in use among the Szekelys. This attested to by an archaeological relic, the Bodrog Inscription, from around 900 (*Fig. 9.2.2-1*). *Map 3.6.1-5* shows the western part of the Carpathian Basin and its neighboring areas in the 10th century.

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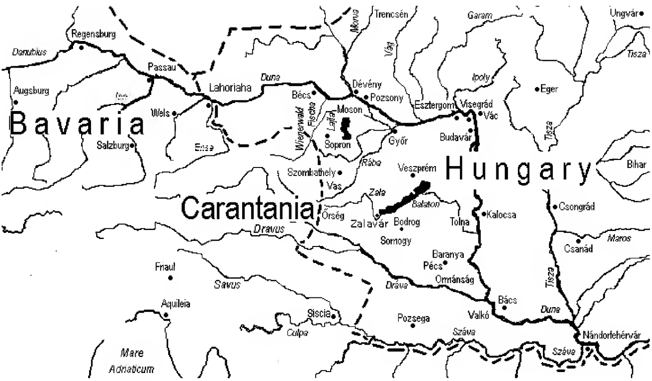
[172] Szentpéteri 1995; Vékony 1999c; Szőke 2000, pp. 336–337; 2004, p. 186; Fodor 2009, p. 65

[173] Erdélyi 2004c, p. 169

[174] Benda, Bertényi, & Pótó 2004; Erdélyi 2008b, pp. 52–58



Map 3.6.1-5: The West Carpathian Basin and the neighboring areas from 894 to 973. The map is based on Fodor.[175]

3.6.2. Evolution of SHR—Stage 1: The earliest glyphs (8th century)

A) General description

The evolution of Szekely-Hungarian Rovash strongly depended upon the evolution of the Hungarian language (*Table C-1*). The history of Szekely-Hungarian Rovash started in the Ancient Hungarian linguistic period. Therefore, the earliest Szekely-Hungarian Rovash grapheme repertoire had to represent the phonemes of the Hungarian language from the 9th century.

Szekely-Hungarian Rovash was not created artificially; it is a **direct** descendant of Carpathian Basin Rovash. The earliest grapheme set of Szekely-Hungarian Rovash can be determined based on the comparative analysis of the known oldest rovash relics, taking into account the facts of linguistic history.

From the first third of the 20th century, scientists claimed that the origin of the SHR 𐲀 AA was the Early Cyrillic А A /a/.[176] However, as the author of this book recognized, the Early Cyrillic А A is less similar to the glyph of the SHR 𐲀 AA than to the uncial grapheme 'A', which was commonly used from the 4th to the 8th centuries in Latin and Greek manuscripts.[177] An example for the uncial grapheme 'A' from the Codex Bezae is A.[178] The origin of the SHR 𐲀 AA /a/e/eː/ is very probably the CBR ˥ FORKED E /a/ɛ/e/. Only the design unification of 𐲀 was influenced by the uncial Latin A A, applying an auxiliary slanting line. As *Table 3.6.2-1* demonstrates, this method was applied in several cases in the creation of SHR glyphs. Moreover, the vertical line of the SHR

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[175] Fodor 2009: 76

[176] Németh 1917–1920, pp. 31–44; Melich 1925, pp. 153–159; Király 1971a, 1971b; Róna-Tas 1996a, p. 338

[177] Merriam-Webster's 2003, p. 1361, article "²uncial"

[178] Parker 1992

𐲁 AA was *never* slanting, unlike the longest line of the uncial Ꭺ A, which was *always* slanting. Another argument is that the Early Cyrillic А A /a/ (and any other uncial Ꭺ A) *never* represented /eː/; however, in the earliest Szekely-Hungarian Rovash relic the sound value of SHR 𐲁 AA was /eː/ (*Fig. 9.2.2-1*), inherited from the CBR ˥ FORKED E /a/ɛ/e/.

B) The roots of SHR

Szekely-Hungarian Rovash evolved from Carpathian Basin Rovash having been widely used in the Avar Khaganate (Carpathian Basin and present-day Moravia and Lower Austria). However, there are some Szekely-Hungarian Rovash graphemes whose origin is questionable since they could have been derived from any of the Proto-Rovash, Carpathian Basin Rovash or Steppean Rovash. For historical reasons, Steppean Rovash was not able to affect SHR in the 8th century. Consequently, Carpathian Basin Rovash was the direct ancestor of Szekely-Hungarian Rovash. *Tables 3.6.2-1* and *3.6.2-2* show PR, CBR and SR graphemes, which probably existed in the earliest set of SHR. The graphemes with Hungarian phonetic values in the Ancient Hungarian linguistic period in *Table 3.6.2-1* can only be found in CBR. The graphemes in *Table 3.6.2-2* are practically identical in PR, CBR and SR.

Carpathian Basin Rovash	Szekely-Hungarian Rovash
˥ FORKED E /a/ɛ/e/	𐲁 AA /a/aː/ɛ/e/eː/
(*Aethicus*) ℸ, *𐲆 CS /*t͡ʃ/	𐲆 CS /t͡ʃ/
(*Aethicus*) ᘔ, *϶ DIAGONAL E /a/ɛ/	𐲉 E /ɛ/
⟋ SIMPLE G /g/	ϟ, 𐲎 GY /g/
𐲓 SHARP K /k/	𐲓 SHARP K /k/
𐲔 OPEN K /k/	𐲔 OPEN K /k/
Ꭓ, (*Aethicus*) ᓭ FORKED L /l/	𐲖 L /l/
(*Aethicus*) Ø LY /j/ʎ/	𐲗 LY /ʎ/
𐲙 N /n/ɲ/	𐲙 N /n/*ɲ/
} OPEN O /o/u/	𐲛 O /o/u/
𐲥 SZ /r/s/	𐲥 SZ /r/s/
𐲲, 𐲲 CLOSED S /ʃ/	𐲲 US /ʃ/
ᖆ, ᖆ, ᖆ OPEN Z /z/	𐲯 Z /z/

Table 3.6.2-1: Carpathian Basin Rovash graphemes that survived in Szekely-Hungarian Rovash

The origin of the SHR 𐲁 AA /a/aː/ɛ/e/eː/ was the CBR ˥ FORKED E /a/ɛ/e/ or the PR ˥ FORKED E /a/ɛ/e/. These CBR and PR graphemes are practically identical accordingly that CBR is descendant of PR. The SHR 𐲙 N /n/*ɲ/ was probably borrowed from CBR and not SR, since the PR or SR 𐲙 N /n/ never denoted /ɲ/. Based on the known relics, the SR 𐲥 SZ /s/ did not represent /r/. The Proto-Rovash ϶ DIAGONAL E /ɛ/ did not represented /a/, therefore the ancestor of the SHR *϶ DIAGONAL E /a/ɛ/ had to be the CBR ᘔ, *϶ DIAGONAL E /a/ɛ/.

Proto-Rovash, Carpathian Basin Rovash and Proto Rovash	**Szekely-Hungarian Rovash**
PR/CBR X B /b/	X B /b/
CBR (*Aethicus*) ᛋ, *ʎ FORKED G /g/	Λ G /g/
PR/CBR/SR Γ, 1 ANGLED I /i/	1 J /i/iː/ɯ/j/
PR/CBR/SR ʒ, ƹ OPEN M /m/	ɋ M /m/
PR/CBR/SR N GH /ɣ/	Ꮒ GH /ɣ/
CBR (*Aethicus*) ቶ, ⅎ FORKED P /f-/p/, SR ⅎ FORKED P /p/	ꟼ P /p/
PR/CBR/SR ᒉ OPEN V /β/	ᒉ OPEN V /β/

Table 3.6.2-2: The graphemes that appear in PR, CBR and SR which were also used in SHR

In Carpathian Basin Rovash, there was no grapheme representing /t͡s/. In the 9th century Hungarian language, the sound /t͡s/ did not exist as an individual phoneme, only as an allophone (*Ch. 2*). Some examples of the use of /t͡s/ as an allophone from that time are *cinege* 'titmouse', *τιτζα* (early name of the *Tisa* River—the word having survived in a Greek source)[179], and *castelic* (>*Kesztölc*[180], a village in Hungary). In Szekely-Hungarian Rovash, there is a glyph for the sound /t͡s/, which indicates the evolution of this sound.

There are numerous possible ways the glyph for the SHR ↑ C /t͡s/ could have been obtained. One possibility is that it was borrowed from the Lydian script. Both the glyph and the grapheme-name of the Lydian ᛏ C is like that of the SHR ↑ C. However, their sound values are different: the Lydian ᛏ C maybe represented /d͡z/[181] but the SHR ↑ C denotes /t͡s/. Due to historical distance, its influence was possible only through Proto-Rovash and then Carpathian Basin Rovash. Another possibility, proposed by Rumi, is that the SHR ↑ C /t͡s/ might have evolved from the CBR ᛦ OPEN K /k/ as influenced by the medieval Latin-based Old Hungarian orthography (see *Table C-2*), in which the grapheme *c* denoted both /k/ and /t͡s/.[182] The third possibility, presented by Vékony, is that the origin of the SHR ↑ C /t͡s/ is the Runic ᛏ TIWAZ.[183] Vékony claimed that in the Old High German dialect it was *Ziu* and its pronunciation is attested to be /t͡sio/ in the Wessobrunn Prayer.[184] However, the glyph of the ᛘ ZIU rune is significantly different from both the Runic ᛏ TIWAZ and the SHR ↑ C /t͡s/. Therefore, the SHR ↑ C /t͡s/ has no relation to the Runic script. Consequently, the origin of the SHR ↑ C /t͡s/ is presently unclear.

According to the author, the SHR ↑ C /t͡s/ most probably originated from the Lydian ᛏ C through the Proto-Rovash > Carpathian Basin Rovash pathway. This claim is in accordance with the fact that the Anatolian scripts (Carian, Lydian, Lycian) influenced Proto-Rovash in some ways. However, more evidence of these ties is needed.

C) The earliest Szekely-Hungarian Rovash graphemes

The majority of the SHR graphemes are identical to their ancestors, based on the topological comparison (*Table 3.6.2-3*).

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[179] Porphyrogenetus (913–959 AD)

[180] TA 1055

[181] Melchert 2004, pp. 602–603

[182] Rumi, Tamás 2011: *Personal communication*

[183] Vékony 1987a

[184] Wessobrunner Gebet

Application of script evolution principles	Resulting grapheme
- **None:** The CBR X B /b/ survived in SHR.	X B /b/
- **Borrowing:** Maybe the Lydian ↑ C survived in SHR through the Proto-Rovash and the CBR scripts.	↑ C /t͡s/
- **None:** The CBR (*Aethicus*) ᒣ, *Ħ CS /*t͡ʃ/ survived in SHR.	Ħ CS /t͡ʃ/
- **Latin:** The CBR Γ ANGLED I /i/ survived in SHR. It is highly probable that the mirrored shape of the Γ ANGLED I /i/ also existed in CBR like Proto-Rovash. Up to the 13th–16th centuries the same glyph was used for /i/ and /j/, which could be due to the influence of the early Medieval Latin orthography.	1 J /i/iː/ɯ/j/
- **None**: In the known CBR relics, the grapheme ◊ K has not been found. The SHR ◊ K is identical to the Lycian ◇ K /k/kʲ/; and the Proto-Rovash ◊ CLOSED Q /q/. Therefore, the grapheme ◊ K surely existed in the early Carpathian-Basin Rovash, which is a descendant of Proto-Rovash.	◊ K /k/
- **None:** The CBR Å SHARP K /k/ survived in SHR. Since it is attested to in village Torja (11th c., see *Fig. 7.2.10-1*), where Szekelys lived since 12th c., the adaptation of this grapheme surely happened in the 12th –13th centuries.	Å SHARP K /k/ After the 14th c. it was not in use.
- **None:** The CBR ᛎ OPEN K /k/ survived in SHR.	ᛎ OPEN K /k/
- **None:** The CBR (*Aethicus*) Ø LY /j/ʎ/ survived in SHR, the length of the slanting line is changeable.	Ø LY /ʎ/
- **None:** The CBR Ↄ N /n/ɲ/ survived in SHR. In SHR the Ↄ N /n/ was very probably used for representing /ɲ/ as well. In the Bologna Rovash Relic, D NY /ɲ/ is in the end of the alphabet (*Fig. 9.2.6-4*), which indicates that originally it was not part of the alphabet. Probably, the alphabet was extended with the grapheme D NY /ɲ/ later. Consequently, in the earliest grapheme set of SHR, there was no individual glyph for representing /ɲ/. One reason could be that the CBR Ↄ N represented both /n/ and /ɲ/, e.g. Környe (*Fig. 7.2.1-1*). The sound value /ɲ/ for the SHR Ↄ N is attested to from 1629 (*Table 9.2.8-1*); however, it could show the earlier use of the SHR Ↄ N. Since the phoneme /ɲ/ existed in the Hungarian language in this time, SHR symbols had to exist for it. In the 12th–14th c., a ligature-based symbol was created for representing /ɲ/, see *Table 3.6.4-3*. If there had been an individual SHR symbol for /ɲ/, there would not have been a need to create a new symbol for /ɲ/. The reason for creating a symbol for /ɲ/ was most probably to differentiate between the SHR symbols for /ɲ/ and another sound, which could not be other than /n/ based on the similarity of their pronunciation.	Ↄ N /n/*ɲ/
- **None:** The glyph Φ of the CBR Φ, Ө CLOSED S /ʃ/ survived in SHR. The existence of the glyph variant Φ of the CBR Ө CLOSED S /ʃ/ is attested to in a CBR relic (*Fig. 7.2.9-8c*).	Φ US /ʃ/
- **None:** The CBR I SZ /r/s/ survived in SHR.	I SZ /r/s/
- **None:** The CBR N GH /ɣ/ survived in SHR. In Hungarian, the /ɣ/ was used only in the middle or the end of words.	ч GH /ɣ/

Application of script evolution principles	Resulting grapheme
- **None:** The CBR *𐲦 T /d/ is only attested in a calligraphic form (ɤ) in the Aethicus' Alphabet *(Sec. 7.2.7)*. It is very probably a simplified glyph variant of the Imperial Aramaic 𐡃 DALETH /d/ð/, surely through first Proto-Rovash then CBR.	𐲦 T /t/d/
- **None:** The CBR 𐲮 OPEN V /β/ survived in SHR; see Bodrog Relic (around 900, *Sec. 9.2.2*) and Székelydálya (*Fig. 9.2.4-1*).	𐲮 OPEN V /β/

Table 3.6.2-3: The SHR glyphs which are identical to the appropriate glyphs of its ancestors

As an example, the SHR 𐲎 GY originally represented the sound /g/: *Fig. 9.2.8-3, Fig. 9.2.8-9, Fig. 9.2.6-4, Sec. 9.2.6/C*, and *Fig. 9.2.6-8b*. Therefore, very probably the ancestor of the SHR 𐲎 GY was the CBR ⟋ SIMPLE G /g/. However, when the SHR 𐲎 GY was created as a duplication of the glyph of ⟋ SIMPLE G—in the ligature-oriented period (12th–14th centuries, *Sect. 3.6.4/C*)—CBR had already been extinct. Consequently, SHR probably borrowed ⟋ SIMPLE G from the Carpathian Basin Rovash first, and then the SHR 𐲎 GY was created (*Table 3.6.2-3*).

Table 3.6.2-4 shows the SHR graphemes that were modified compared to their Carpathian Basin Rovash ancestors. During this process, in almost every case, the applied glyph-forming method was "*Line insertion*". This is evidence that these modifications were carried out by one person or a group of scholars. This is in accordance to Vásáry and Sándor, who also claimed the effect of careful, conscious design.[185] Vásáry claimed that the earliest form of SHR may have been the result of a tentative unification of the glyphs.[186] The applied script evolution principles used during the shaping of these SHR graphemes are described below.

Glyph-forming method	Application of script evolution principles	Resulting grapheme
Line insertion	- **Closer-shape forming, Differing, Latin/Greek:** The CBR 𐲦 FORKED E /a/ɛ/e/ was shaped according to the Uncial Latin or Greek Ⲁ A. The use of 𐲁 AA for representing /eː/ is attested by the Bodrog Relic (around 900, *Sec. 9.2.2*).	𐲁 AA /a/aː/ɛ/e/eː/
Line shifting	- **Writing technology**: The CBR (*Aethicus*) ꝣ, *϶ DIAGONAL E /*a/*ɛ/ survived in SHR. To make it easier to carve into wood, the short lines of *϶ DIAGONAL E /a/ɛ/ were shifted. This grapheme was restricted to the use of /ɛ/ based on the known relics. In such a way, the SHR glyphs of /a/ and /ɛ/ became different. The Glagolitic script also borrowed it (**Ⰵ** JEST /ɛ/).	𐲉 E /ɛ/
Line insertion	- **Closer-shape forming, Symmetry:** Applyied an auxiliary slanting line on the CBR (*Aethicus*) ϟ,*ʎ FORKED G /g/ to obtain a symmetrical envelope curve. It is also possible that the upper short line of the * was moved like the evolution of the SHR 𐲛 O /o/u/, see below.	𐲍 G /g/

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[185] Vásáry 1974, pp. 168; Sándor 1996a, pp. 83–93

[186] Vásáry 1974, pp. 159–171

Glyph-forming method	Application of script evolution principles	Resulting grapheme
Line insertion or Duplication	- **Closer-shape forming, Differing:** The CBR SIMPLE G /g/ survived in SHR with an auxiliary slanting line or in a duplicated form (*Table 3.6.4-3*). One possible reason for modification was to differ from the SIMPLE R /r/.	GY /*g/
Line shift & insertion	- **Closer-shape forming, Greek, Symmetry:** Applied an auxiliary slanting line in the case of the CBR FORKED L /l/ in order to obtain a symmetrical envelope shape and also to fit the style of the SHR G /g/. Possibly the shape of the Greek λ LAMBDA also influenced the design of the SHR L. Probably, the glyph variant * was used as the ancestor of the SHR glyph. Similar SHR glyph variants are attested to in *Fig. 9.2.8-5*: L /l/ (in the second alphabet) and in *Fig. 9.2.7-5b*: L /l/.	L /l/
Mirroring & Line insertion	- **Closer-shape forming:** A vertical line was applied in order to close the form of the CBR OPEN M /m/. Surely, the mirrored glyph of the CBR OPEN M /m/ also existed. It is not attested to by the known surviving Carpathian Basin Rovash relics; however, there are examples for the mirrored glyph in SR, which is a close relative of CBR (e.g., see *Fig. 8.2.6-4*).	M /m/
Line shifting	- **Closer-shape forming:** Modification of the CBR OPEN O /o/u/ in order to get a topologically closer form by shifting the two vertical lines toward each other.	O /o/u/
Line insertion	- **Differing:** Applying an auxiliary slanting line in case of the CBR FORKED P /f-/p/ probably in order to differ from the OPEN V /β/. The CBR SIMPLE P /p/ did not survived in SHR; its reason was maybe that its glyph was identical to the mirrored glyph of the CBR ANGLED I /i/.	P /p/
Line insertion	- **Closer-shape forming, Differing, Symmetry:** Applying an auxiliary vertical line to the CBR OPEN Z /z/, the new glyph differed from P /p/, and the new SHR Z /z/ was more closed than its CBR ancestor OPEN Z /z/. Moreover, the SHR glyph became centrally symmetric, unlike its ancestor.	Z /z/

Table 3.6.2-4: The SHR graphemes that are shaped versions of their CBR ancestors

Szekely-Hungarian Rovash was predominantly applied to wooden sticks. Carving into wooden material, the horizontal line could coincide with the wood's grain, and the carving knife could easily slip. Probably, one of the reasons why some borrowed glyphs were modified in SHR was to fit the writing techniques (*Table 3.6.2-5*).

Glyph-forming method	Application of script evolution principles	Resulting grapheme
No modification	**None:** The reconstructed CBR *𐳊 /*e/ is probably the ancestor of the survived SHR grapheme.	𐳊 CLOSED E /e/eː/
Slight modification	**Writing technology:** The reconstructed CBR * /*x/ is probably the ancestor of the survived SHR grapheme. The glyph was surrely modified by shortening and slanting its horizontal lines (Nikolsburg Alphabet, see *Fig. 9.2.5-2*) in accordance with the wood carving technology.	𐳩 CH /x/
No modification	**Differing:** The reconstructed CBR *𐳢 /*r/ is probably the ancestor of the survived SHR grapheme.	𐳢 R /r/
Line removal	**Writing technology:** A simplified glyph variant of the reconstructed CBR *𐳤 /*ʃ/ was maybe used, since its small arc was almost impossible to carve into wood.	𐳤 S /ʃ/
No modification	**None:** The reconstructed CBR *𐳨 SHARP T /t/ presumably survived in the 16th century, its earlier shapes are undetermined.	𐳨 SHARP TY /*t/
Line merger	**Writing technology:** The reconstructed CBR *𐳨 SHARP T /t/ is probably the ancestor of the survived SHR grapheme. The *𐳨 SHARP T survived in the Aethicus' *thotimos:* 𐳦.The reason for its modification could be that the SHR glyph (𐳨) was easier to carve. The evidence that this grapheme was borrowed later than the creation of SHR is the fact that the SHR 𐳨 TRIPLE TY represented only /t/. Conversely, the SHR 𐳦 T represented both /t/ and /d/.	𐳨 TRIPLE TY /*t/
Slight modification	**Symmetry, Writing technology:** The glyph variant 𐳮 of the reconstructed CBR *𐳮 /*y/ was surely applied in SHR. A probable reason for this was that the symmetrical shape, vertical, and straight lines of SHR 𐳮 fit the other existing SHR glyphs. Unlike its survived sibling, the Steppean Rovash 𐳬 SHARP UE /ø/*y/, the SHR 𐳮 V /y/ did not denote /ø/—since at that time this vowel did not exist in Hungarian. Its use is attested to in the Vargyas Relic (*Fig. 9.2.3-1b*). The name of the SHR letter (V) shows its final sound value; in the age of its adoption, it surely did not represent /v/.	𐳮 V /y/
No modification	**None:** The reconstructed CBR *𐳰 /*ʃ/ is probably the ancestor of the survived SHR grapheme. For instance, in the Rovash Calendar in the words 𐳰𐳖𐳛𐳔 /koloʒ/ 'Scholastica' and 𐳰𐳪𐳢𐳂𐳡 /ᵒmbruʃ/ 'Ambrosius', the 𐳰 ZS denoted /ʃ/ (*Table 9.2.6-3* and 9.*2.6-4*).	𐳰 ZS /ʃ/

Table 3.6.2-5: Supposed reconstructed Carpathian Basin Rovash graphemes surviving in Szekely-Hungarian Rovash with the most probable applied topological transformation during the development. It is noteworthy that their existence has not yet been attested to by CBR relics.

As for the development of the SHR 𐳤 S /ʃ/, the PR-relationship can be observed in the Nikolsburg Alphabet (*Fig. 9.2.5-2*). There, the glyph of the SHR 𐳤 S /ʃ/ was consequently used even in the ligature 𐳤 ST. In the case of both glyphs, the right-hand line is clearly vertical and not slanted, similar to the PR 𐳤 CIRCLE ENDED SH /ʃ/. The asymmetric property of the glyph 𐳤 was obviously intentional. Other SHR graphemes in the Nikolsburg Alphabet with identical envelope shapes were written consequently with symmetrical slopes (𐳍 G and 𐳖 L). The original, asymmetric shape of the SHR 𐳤 S /ʃ/ can be observed on other earlier SHR relics, including the Rovash Calendar (*Sec. 9.2.6*) as well as the Ancient Alphabet by J. Kájoni (*Fig. 9.2.8-9*). Only later SHR relics show the symmetrically sloped glyph of the grapheme 𐳤 S /ʃ/: Λ.

Róna-Tas claimed that the reconstruction of the history of a script makes possible the restoration of an earlier version, which was probably composed of fewer graphemes.[187] The oldest reconstructed set of SHR graphemes in the beginning of the 9th century is composed of a much smaller number of graphemes than the later repertoire of SHR. In addition, the earliest SHR alphabet differed from the appropriate Carpathian Basin Rovash graphemes only by a few graphemes (*Table 3.6.2-6*). Note that this reconstruction is partly based on indirect evidence.

SHR graphemes being practically identical to appropriate attested or reconstructed CBR graphemes	SHR graphemes originated from attested or reconstructed CBR graphemes with modification
𐳂 B /b/, 𐳄 C /t͡s/, 𐳆 CS /t͡ʃ/, 𐳊 CLOSED E /e/eː/, ϟ GH /ɣ/, 𐳒 J /ɯ/i/iː/j/, 𐳓 K /k/, ↯ OPEN K /k/, 𐳔 SHARP K /k/, 𐳗 LY /ʎ/, 𐳙 N /n/*ɲ/, 𐳢 R /r/, 𐳲 US /ʃ/, 𐳥 SZ /r/s/, 𐳦 T /d/t, *𐳨 SHARP TY /*t/, ɿ OPEN V /β/, 𐳰 ZS /ʃ/	𐳁 AA /a/ɛ/e/eː/, 𐳉 E /ɛ/, 𐳍 G /g/, 𐳎 GY /*g/, 𐳩 CH /x/, 𐳖 L /l/, 𐳘 M /m/, 𐳛 O /o/u/, 𐳠 P /p/, 𐳤 S /ʃ/, 𐳮 V /y/, 𐳯 Z /z/

Table 3.6.2-6: The oldest reconstructed set of SHR graphemes grouped according to their origins

Table 3.6.2-7 shows the phonetic system of consonants. The grapheme to the left in the cell is *voiceless* and to the right is *voiced*.[188] In the Ancient Hungarian linguistic period, the /d͡ʒʲ/ voiced palatalized postalveolar affricate already existed;[189] however, its symbol in Szekely-Hungarian Rovash has not been found in the known relics. The symbols of the /f/ and /x/ in the earliest grapheme set are also unknown.

Place of articulation	Plosive (voiceless)	Plosive (voiced)	Nasal	Fricative	Affricate	Liquid
Bilabial	*𐳠 /p/	*𐳂 /b/	*𐳘 /m/	*ɿ /β/		
Labiodental				* /f/		
Alveolar	*𐳦,*𐳨,*𐳩 /t/	*𐳦 /d/	*𐳙 /n/	*𐳥 /s/ *𐳯 /z/	*𐳄 /t͡s/	*𐳖 /l/ *𐳥,*𐳢 /r/
Postalveolar				*𐳲,*𐳰,*𐳤 /ʃ/	*𐳆 /t͡ʃ/	
Palatal or palatalized			*𐳙 /ɲ/	*𐳒 /j/	/d͡ʒʲ/	*𐳗 /ʎ/
Velar	*↯,*𐳓,*𐳔 /k/	*𐳍,*𐳎 /g/		*𐳩 /x/ *ϟ /ɣ/		

Table 3.6.2-7: The SHR consonants used in the 8th century organized according to their phonetic values (the meaning of each feature is detailed in *Table C-3*).

The phonetic system of the Szekely-Hungarian Rovash vowels is presented in *Fig. 3.6.2-1*.

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[187] Róna-Tas 1996a, p. 338

[188] E. Abaffy 2003a, p. 122; 2003b, p. 316

[189] Zelliger, Erzsébet 2010–2011: *Personal communication*

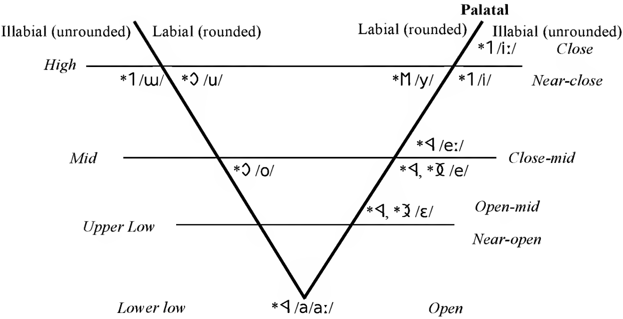

Fig. 3.6.2-1: The graphical representation of SHR vowels used in the 8th century

D) The circumstances of the first age of Szekely-Hungarian Rovash

The circumstances for the evolution of Szekely-Hungarian Rovash are summarized in *Table 3.6.2-8*. In that time the Hungarian population of Pannonia presumably used Carpathian Basin Rovash. Accordingly, Szekely-Hungarian Rovash surely gradually differentiated from the Carpathian Basin Rovash due to the geographical isolation of the Hungarians in West Pannonia, which belonged to the Frankish Empire from 796. At this time, an evangelization was begun by missionaries of the Salzburg Archbishopric. Note that beginning in 863, the evangelization of West Pannonia was organized by the Greek missionaries Saint Cyril and Saint Methodius. From that time onwards, the influence of the Salzburg Archbishopric significantly decreased. Saints Cyril and Methodius used Slavic as the language of the liturgy and the newly invented Glagolitic alphabet for the evangelization. Therefore, the emerging SHR had to be influenced by the Christian missionaries before this time, from the end of the 8th century.

Circumstance	**Consequence**
The Frankish Church consciously planned the evangelization of the local population.	- The Salzburg Archbishopric, which organized the evangelization in Pannonia, created a short collection of necessary knowledge of catechism and prayers.
The missionaries were open-minded to the languages of the local population.	- They surely translated the basic prayers in this case into Hungarian.
A portion of the users of the earliest SHR probably had strong Latin-based script knowledge.	- The CBR Γ ANGLED I /i/ was applied for /i/ and /j/, which was specific to the Medieval Latin orthography.

Circumstance	Consequence
Charlemagne intended to suppress illiteracy and, along with Alkuin, was very interested in the development of alphabets.	- The Frankish missionaries were ready and able to use the script of the local population, besides the predominant Latin and Greek alphabets.
The Avar Khaganate generally used Carpathian Basin Rovash.	- Due to its extended use, Carpathian Basin Rovash was surely used by the missionaries.

Table 3.6.2-8: The circumstances of the early evolution of SHR

The influence of the evangelization by Salzburg can be detected in the Bologna Rovash Calendar (*Sec. 9.2.6*). It contains a fragmentary archaic text (*Fig. 9.2.6-11*), in which there are the titles of two important prayers (*Lord's Prayer*, *Apostles' Creed*) and the geographical name "*Province Pannonia*" (*Fig. 9.2.6-12*). All of these were written onto a wooden stick, as was usual in rovash literacy. Only a paper copy of the original Rovash Calendar's subsequent copies survived, made by Luigi Ferdinando Marsigli, an Italian soldier and naturalist, in 1690.[190] The manuscript of Marsigli was found in Bologna (Italy); therefore, this rovash relic is named after Bologna. Marsigli wrote on page 669 of his manuscript, "*...Calendario... per uso di quei primi convertiti alla Fede Cattolica...*"[191] It means, that according to Marsigli, the Rovash Calendar originated from the people who converted to Christianity *earliest*.[192]

3.6.3. Evolution of SHR—Stage 2: Incorporating loan graphemes (9th–12th/13th centuries)

Rogers explored how borrowing writing systems is affected by social and cultural aspects.[193] This is an improvement on the traditional view of Hockett, which was based on purely linguistic assumptions.[194] Rogers' model is useful to describe the further development of the earliest grapheme set of SHR. During this period (9th–10th centuries), graphemes from other scripts were adopted by SHR. The CBR ℷ FORKED P represented /f-/, which was an important phoneme in the Ancient Hungarian linguistic period. However, it was topologically almost identical to the CBR ˥ OPEN V /β/. That could be the reason why a topologically distinct glyph was needed for representing /f/.

The use of the SHR ⊙ F /f/ was attested to already around 900 (Bodrog Clay Twyer: ◊ϡϽ⊛ /fuβne:k/, see *Fig. 9.2.2-1*). The sound /f/ is a *voiceless labiodental fricative* articulated with the lower lip and the upper teeth. The /θ/ is a *voiceless dental* (often-called *interdental*) *fricative*, which is articulated with the tongue on the lower or the upper teeth. Consequently, the /f/ and the /θ/ are close to each other in terms of pronunciation. The /θ/ is rare in the languages of the world and several times the /θ/ is substituted by other sounds, including /f/. For instance, the pronunciation *Th-fronting* in English also refers to this problem. On the other hand, the German language lacks /θ/.

The Greek Θ THETA /θ/ and its earlier form, θ THETA /θ/ could be suitable for representing /f/ in SHR (*Table 3.6.3-1*). The archaic glyphs of the Greek Θ THETA were written as a cross within a circle, using the following two versions: ⊕ and ⊗. Based on the listed facts the Greek Θ THETA was almost surely the direct ancestor of the SHR F /f/, which has three glyph variants: ⊙, ⊗, and ⊕. Possibly, the earliest version of the SHR F /f/ was the ⊙ F /f/ (*Fig. 9.2.2-1*), derived from the Greek Θ THETA, and the other glyph variants ⊗ and ⊕ are later modifications (*Table 3.6.5-2*).

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[190] Sándor 1991
[191] Sándor 1991
[192] Vékony 1987a, p. 289
[193] Rogers 1999, p. 260
[194] Hockett 1958, p. 545

Application of script evolution principles	Resulting grapheme
- **Adaptation, Borrowing, Writing technology:** The original version of the Greek θ THETA /θ/ with sound /f/ was borrowed and its horizontal line was slanted (Vargyas Relic, see *Fig. 9.2.2-1*) in accordance with the wood carving technology.	Ø DIAGONAL F /f/
- **Adaptation, Borrowing, Writing technology:** The Greek Θ THETA /θ/ with sound /f/ was borrowed with slight simplifications.	⊙ F /f/

Table 3.6.3-1: Influence of the Greek script on SHR with the most probable topological transformations in their development. The SHR Ø DIAGONAL F /f/ did not occur after the 12th–13th c.

The incorporation of the Greek θ THETA /θ/ into SHR might be related to the evangelization of the Byzantine missionaries Saints Cyril and Methodius. The similarly shaped Glagolitic Ⱚ FITA grapheme for the sound /f/ offers indirect evidence of this,[195] since the Glagolitic alphabet was used by the Byzantine missionaries.

The incorporation of the Glagolitic grapheme ϶ ON /ɔ/ also belongs to this stage of SHR's evolution; it will be presented in detail in *Sec. 3.7.2.* This grapheme was used locally and did not survive after the 12th century. *Table 3.6.3-2* shows the reconstructed system of SHR consonants in the beginning of the 10th century, where the grapheme to the left in the cell is *voiceless* and to the right is *voiced.*[196]

Place of articulation	Plosive	Nasal	Fricative	Affricate	Liquid
Bilabial	*𐳠 /p/ *𐳂 /b/	*𐳘 /m/	𐳮 /β/		
Labiodental			⊙, *Ø /f/		
Alveolar	*𐳦,*𐳧,*𐳨 /t/ *𐳇 /d/	𐳙 /n/	*𐳥 /s/ *𐳯 /z/	*𐳄 /t͡s/	*𐳖 /l/ *𐳢,*𐳣 /r/
Postalveolar			*𐳤,*𐳰,*𐳲 /ʃ/	*𐳆 /t͡ʃ/	
Palatal or palatalized		*𐳚 /ɲ/	*𐳒 /j/	/d͡ʒʲ/	*𐳗 /ʎ/
Velar	*𐳓,𐳔,*𐳕 /k/ *𐳍 /g/		*𐳏 /x/ *𐳏 /ɣ/		

Table 3.6.3-2: SHR consonants used in the 10th century, organized according to their phonetic values

The phonetic system of SHR vowels in the 10th century is presented in *Fig. 3.6.3-1.*

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[195] Vékony 1985a, pp. 82–83

[196] E. Abaffy 2003a, p. 122; 2003b, p. 316

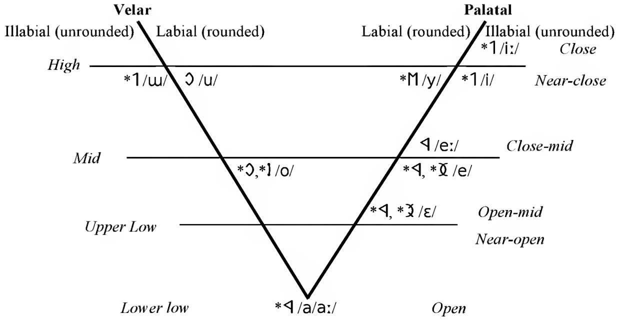

Fig. 3.6.3-1: SHR vowels used in the 10th century

Fig. 3.6.3-2 presents the flow chart of the development of the Rovash scripts and the external influences on them in the Carpathian Basin from 567 AD to the 11th century.

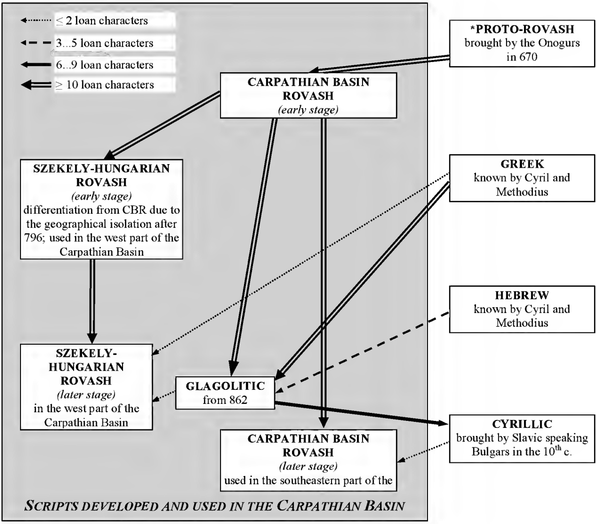
≤ 2 loan characters
3...5 loan characters
6...9 loan characters
≥ 10 loan characters
*PROTO-ROVASH
brought by the Onogurs in 670
CARPATHIAN BASIN ROVASH
(early stage)
SZEKELY-HUNGARIAN ROVASH
(early stage)
differentiation from CBR due to the geographical isolation after 796; used in the west part of the Carpathian Basin
GREEK
known by Cyril and Methodius
HEBREW
known by Cyril and Methodius
SZEKELY-HUNGARIAN ROVASH
(later stage)
in the west part of the Carpathian Basin
GLAGOLITIC
from 862
CYRILLIC
brought by Slavic speaking Bulgars in the 10th c.
CARPATHIAN BASIN ROVASH
(later stage)
used in the southeastern part of the
SCRIPTS DEVELOPED AND USED IN THE CARPATHIAN BASIN

Figure 3.6.3-2: Flow chart of the evolution Rovash and Glagolitic scripts in the Carpathian Basin up to the 11th century

3.6.4. Evolution of SHR—Stage 3: Age of ligatures (11th–14th centuries)

Starting in the 11th century, the Latin-based Old Hungarian orthography (see *Table C-2*) affected Szekely-Hungarian Rovash. This stage of the evolution of SHR was named after the ligating technique that became popular in this period and was consciously used for creating new graphemes in SHR.

A) Influence of phonetic changes

SHR was affected by the significant phonetic changes in the Hungarian language of the early Old Hungarian linguistic period (from the 10th to the 13th centuries, see *Table C-2*). As Rogers demonstrated, if a language and its writing system get out of line with each other, then it would appear to be the job of orthographic reform to bring them back into a simple relationship.[197] In the

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[197] Rogers 1999, p. 258

13th century, the new phoneme /ø/ appeared in the Hungarian language.[198] There were two main ways for the evolution of the phoneme /ø/ to occur, namely /e/>/ø/ (labialization) and /y/>/ø/ (becoming more open), see *Table 3.6.4-1*.[199] However, sporadically, the /ø/>/y/ change happened, too.[200]

In the Hungarian language, the sound /h/ appeared from two sources: /k/ and /x/.[201] The transition /k/>/h/ happened as /k/>/x/>/h/.[202] The change /k/>/x/ occurred even in the Ancient Hungarian linguistic period (before 896),[203] and /x/>/h/ happened between the 12th and 13th centuries.[204] Sándor explored that there was no grapheme for /h/ in the Rovash Calendar.[205] A typical example is the name 𐲉𐲢𐲛𐲇𐲤 /ɛrodᵋʃ/ 'Herod' (*Table 9.2.6-7*) in the Rovash Calendar. The absence of the rovash grapheme for /h/ was surely related to the disappearance of /x/ from the Hungarian language.

Glyph-forming method	Application of script evolution principles	Resulting grapheme
No modification	**Adaptation:** Use of 𐲁 AA /a/aː/ɛ/e/eː/ was modified and restricted to /ɒ/a/aː/.	𐲁 AA /ɒ/a/aː/
No modification	**Latin:** 𐲄 C /t͡s/ was also employed for both /k/ and /t͡ʃ/ (*Table 3.6.6-1*).[206]	𐲄 C /t͡s/k/t͡ʃ/
Line shifting	**Adaptation:** The 𐲇 D, a glyph variant of 𐲦 T /t/d/ started to be exclusively used for /d/. The 𐲦 T was still applied for both /d/ and /t/, e.g. Vargyas Inscription (12th-13th c., see *Fig. 9.2.3-1b*) and Constantinople Inscription (1515, see *Table 9.2.7-2*). Later, the use of 𐲦 T was gradually restricted to /t/.	𐲇 D /d/, 𐲦 T /t/
Line shifting	**Adaptation:** The grapheme 𐲉 E /ɛ/ was adapted to denote /e/eː/ (appearing in the end of the Ancient Hungarian linguistic period, see Rovash Calendar: 𐲘𐲁𐲦𐲉 /maːteː/ 'Mathieu' (*Table 9.2.6-5*). The first occurrence of 𐲉 E is attested to by the Székelydálya Relic (around 1400, see *Fig. 9.2.4-1*).	𐲉 E /ɛ/e/eː/
No modification	**Latin:** The SHR 𐲍 G /g/ was also employed for /d͡ʒʲ/, and from the 12th–15th c. for /ɟ/ (*Table 3.6.6-1*).	𐲍 G /g/d͡ʒʲ/ɟ/

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[198] Vékony 2004a, p. 23

[199] E. Abaffy 2003b, p. 330

[200] Korompay 2012

[201] E. Abaffy 2003a, pp. 118–119; 2003b, pp. 303–304

[202] Zelliger, Erzsébet 2010–2011: *Personal communication*

[203] E. Abaffy 2003a, p. 314

[204] Zelliger, Erzsébet 2010–2011: *Personal communication*

[205] Sándor 1991; Vékony 1997b, pp. 1317–1340; Vékony 2004a, p. 105

[206] Vékony 2004a, p. 106

No modification	**Latin:** The grapheme 𐲊, 𐲊 CLOSED E /e/eː/ was also used for denoting the consonant /h/ (Rudimenta, see *Fig. 9.2.7-7a,b*). Its background could be that the consonant cluster *eh* represented the sound /e/ in a certain period of the Latin-based Old Hungarian orthography, e.g. in *Emreh* /ɛmre/.[207] Therefore, the *eh* could serve as a letter-name for the grapheme 𐲊, 𐲊 CLOSED E /e/eː/. In this period, the consonant /h/ appeared in the Hungarian language, and maybe the letter name *eh* of the 𐲊, 𐲊 CLOSED E /e/eː/ was the reason that 𐲊, 𐲊 CLOSED E started to be used for representing /h/.	𐲊, 𐲊 H /h/
No modification	**Differing:** The use of 𐲛 O /o/ was restricted to represent /o/ and the 𐲮 V /y/ was started to use for /u/, see below.	𐲛 O /o/
Rotating & Line shortening	**Differing:** Slightly modifying the glyph of 𐲥 SZ /s/r/ when it was used for representing /r/ by slanting the vertical line. In such a way the 𐲣 SIMPLE R /r/ differed from the 𐲥 SZ /s/.	𐲣 SIMPLE R /r/
No modification	**Adaptation:** In the Hungarian language, /c/ appeared from the 13th century on. In SHR, 𐲦 T, 𐲨 TRIPLE TY, and probably 𐲨 SHARP TY were used for representing /c/.[208] In the Rovash Calendar (*Table 9.2.6-3*) in the words 𐲇𐲣𐲦𐲀 /d̲u̲r^{u}c^{c}ɒ/ 'Dorothy' and 𐲘𐲀𐲦𐲀𐲤 /maːcaːʃ/ 'Matthias' /c/ was denoted by 𐲦 T.	𐲦 T /t/d/c/, 𐲨 TRIPLE TY /c/, *𐲨 SHARP TY /c/
No modification	**Adaptation, Latin:** Because of the influence of the early Old Hungarian orthography, 𐲮 /y/ started to be used also for denoting /u/uː/.[209] Evidence of this is obvious on the Homoródkarácsonyfalva Inscription (ca. 13th c., see *Fig. 9.2.3-2c*). Note that at this time, the short and long versions of the same vowel were represented by the same grapheme in both the Szekely-Hungarian Rovash and the Latin-based Old Hungarian orthography.	𐲮 V /y/u/uː/
No modification, rotating	**Adaptation:** In the 11th century, /ɣ/ gradually disappeared from the middle of the Hungarian words. Moreover, at the end of the words, /ɣ/ was vocalized, and it became /u̯/ or /y̯/.[210] They were used as diphthongs with the preceding vowel: /ɤu̯/ and /ɤ̈y̯/ (*Table A-2*). In the 12th–14th centuries, a monophthongization occurred: /ɤu̯/>/oː/uː/ and /ɤ̈y̯/>/øː/yː/.[211] The influence of this phonetic development can be detected in the evolution of SHR as well. Namely, glyphs for /øː/yː/ were derived from ꜧ GH /ɣ/. Consequently, besides the disappearance of /ɣ/, its glyph (ꜧ) survived and it was used for /øː/yː/. However, during this process its shape was slightly modified. Later, the 𐲞 OPEN OE was also used for the short vowels /ø/y/.[212]	𐲞 OPEN OE /øː/yː/

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[207] Fehértói 2004; Korompay, Klára 2010–2011: *Personal communication*

[208] Vékony 2004a, p. 105

[209] Vékony 2004a, p. 15

[210] E. Abaffy 2003b, p. 302, p. 312

[211] E. Abaffy 2003b, pp. 339–344

[212] Hosszú 2012a, *passim*

No modification	**Adaptation, Latin:** In the 12th–13th centuries, the change /β/>/b/v/ occurred; however the /β/ remained in use for centuries in the eastern part of the Carpathian Basin.[213] Its consequence was that, becoming unnecessary, ⅂ OPEN V /β/ disappeared from SHR. The 𐲮 V /y/uː/u/ was used for /v/ like the grapheme *u* in the Latin-based Old Hungarian orthography, which represented /y/u/uː/v/ as well (*Table 3.6.6-1*).	𐲮 V /y/u/uː/v/
No modification	**Latin:** In the Hungarian language, in several cases, /ʃ/ underwent voicing and became /ʒ/.[214] This happened in the 12th century, e.g. the pronunciation of the word *ẏſaac*[215] was /iʒaːk/ 'Isaac'.[216] First /ʒ/ appeared in Hungarian as an allophone of /ʃ/.[217] That is why in the Old Hungarian orthography the graphemes *s* and *ſ* was also used for representing the /ʒ/.[218] Similarly, the SHR 𐲰 ZS could also represent a /ʒ/-like allophone of /ʃ/. This could be the reason why 𐲰 ZS /ʃ/ was also used for /ʒ/.	𐲰 ZS /ʃ/ʒ/

Table 3.6.4-1: Modification of SHR graphemes in the 11th–13th centuries with the most probable topological transformations in their development

B) Symbols denoting a period of time

In 1092, there was a synod of the Hungarian prelates in the Fortress of Szabolcs (*App. B*), where the dates of the mandatory feasts were determined.[219] According to Vékony, a Catholic calendar written in the Latin-based Old Hungarian orthography, was made after this synod and transcribed into SHR, which is assumed to be the origin of the Bologna Rovash Calendar (*Sec. 9.2.6/A*).[220] Special symbols for a *period of time* related to the Rovash Calendar survived in some relics (*Table 3.6.4-2*). One of them is the ⋛ NAP /nop/ found in a relic written in the 17th century (*Fig. 9.2.8-9*). However, this symbol retained a much earlier linguistic state, since it was obviously made as a ligature of 𐲙 N /n/ + 𐲛 O /o/ + 𐲠 P /p/. In several Hungarian words, /o/ started to be more open in the 11th century, becoming /ɒ/ by the 14th century.[221] Therefore, the original ligature ⋛ NAP /nop/ was created no later than the 14th century.[222] Its creation probably happened in the same period as the evolution of *϶ /ɛ/ > 𐲉 E /ɛ/ (*Table 3.6.4-1*), since in both cases the short lines reaching the long vertical arc were modified in order to cross the arc: ϶ > 𐲉 and 𐲠 > ⋛.

The Szekely-Hungarian Rovash symbols ♈ ANT (*Table 3.6.4-3*), ⵋ TPRU, and 𐲃 AMB are *reptile-like* in shape as Telegdi characterized them in his Szekely-Hungarian Rovash textbook in 1598 (*Fig. 9.2.7-7a*). According to Telegdi, they—and later their cognate symbols, which are pseudo-ligatures—were named after ***capita dictionum*** (in Latin) and also ***reptile-like symbols***. The components of the Latin expression *capita dictionum* are *dictio, onis, f* 'word, saying' and *caput, itis, n* 'head'; so the meaning of *capita dictionum* could be 'the heads of the words'. Presumably, this term originally referred to the symbol NAP and its descendants (*Table 3.6.4-2*). The term *capita dictionum* could have a header-like meaning in the original version of the Rovash Calendar (*Fig. 9.2.6-1*).

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[213] E. Abaffy 2003b, p. 303

[214] Kenesei 2004, p. 130

[215] HBK; Korompay 2003b, p. 291

[216] Korompay 2003e, p. 787; Korompay, Klára 2010–2011: *Personal communication*

[217] E. Abaffy 2003b, p. 314

[218] E. Abaffy 2003b, p. 314

[219] Péterffy 1741–42, Vol. I, p. 14

[220] Vékony 1987a, p. 289; Vékony 2004a, pp. 106–108

[221] E. Abaffy 2003b, pp. 329–330

[222] Vékony 2004a, p. 105

There are other examples of similarly designed duplicated graphemes in *Table 3.6.4-3* that proves that the duplication was a characteristic design style in that time. The shapes of the reptile-like symbols show a *conscious* design.

Glyph-forming method	Application of script evolution principles	Resulting grapheme	Sound
Ligature formation	**Symmetry**: Ligature of 𐲙 N /n/ + 𐲛 O /o/ + 𐲠 P /p/	NAP	/nɒp/ (*earlier* /*nop/)
Slight modification	**Vertical emphasis:** Developed from NAP /nop/	TPRUS	/*nɒp/ (*earlier* /*nop/)
Duplication	**Symmetry:** Duplicated ligature of NAP /nop/ or 𐲠 P /p/	𐲡 EMP	/mp/
Slight modification	**None:** Developed from 𐲡 EMP	MB	/mb/
Slight modification	**None:** Duplicated ligature of NAP /nop/	TPRU	/*nɒp/ (*earlier* /*nop/)
Line extension, Ornamenting	**Writing technology:** Variant of TPRU, it was probably merged with the MB based on its sound value	NB	/nb/mb/
Line insertion	**Writing technology:** Variant of TPRU, it was named '*Phtru*' in the relic, where it survived (*Fig. 9.2.8-10*).	TPRU	/*nɒp/ (*earlier* /*nop/)
Line removal, Ornamenting	**Writing technology:** Developed from NB	𐲃 AMB	/mb/

Table 3.6.4-2: SHR graphemes developed for representing the period after 1092 with the most probable topological transformations in their development.[223]

C) Duplication and creating ligatures

Table 3.6.4-3 demonstrates the SHR graphemes created by ligatures. According to the author of this book, the SHR graphemes 𐲪 U and CLOSED OE-UE were created in a conscious development by duplication of the SHR graphemes 𐲯 V /y/u/, and 𐲉 E /ɛ/e/, respectively. The evidence of the ancient use of CLOSED OE-UE for representing /y/ is the Rovash Calendar, since in its archaic parts the grapheme CLOSED OE-UE was consequently used for /y/.[224]

The Latin-based Old Hungarian orthography (*Table C-2*) represented /d͡ʒʲ/ with *g*, *gi*, and later *gy*, e.g.: *gimilcíctul* /d͡ʒʲimilt͡ʃiktyːl/ 'from their fruits', *oggun* /ɒd͡ʒʲːon/ 'give (*imperative*)'.[225] Influenced by the Old Hungarian orthography, the SHR graphemes of /g/ (𐲍 and 𐲎) surely also represented /d͡ʒʲ/. In order to use different glyphs for /g/ and /d͡ʒʲ/ the less frequently applied grapheme of /g/ was selected for representing /d͡ʒʲ/, the 𐲎 GY /d͡ʒʲ/. The more common letter (𐲍) was gradually restricted to /g/.

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[223] Végkony 2004a

[224] Sándor 1991

[225] HB (Funeral Sermon, ca. 1195); Szathmári 2002, pp. 202–212

Glyph-forming method	Application of script evolution principles	Resulting grapheme
Ligature formation	**None:** Ligature of 𐲄 C /t͡s/ and 𐲓 OPEN K /k/	𐲄‍𐲓 CAK /t͡sk/
Duplication	**Symmetry:** Duplication of 𐲄 C /t͡s/	𐲅 ENC /nt͡s/
Ligature formation	**None:** Ligature of 𐲙 N /n/ and 𐲆 CS /t͡ʃ/	𐲙‍𐲆 NCS /nt͡ʃ/
Duplication	**Symmetry:** Duplication of 𐲇 D /d/	𐲈 AND /nd/
No modification	**Adaptation, Latin:** It was used for representing /d͡ʒʲ/, which shoes the influence of the Latin-based Old Hungarian orthography, where *g* or *gy* represented the sound /d͡ʒʲ/.	≶ GY /d͡ʒʲ/g/
Line insertion	**Closer-shape forming:** Insertion of an auxiliary vertical line (Nikolsburg, see *Fig. 9.2.5-2*) modifying the glyph to be contiguous. It was first used for /g/. An example for its use as /g/ is the name 𐲖𐲁𐲎 /gaːl/ 'Gallus' of the Rovash Calendar (*Table 9.2.6-6*).	𐲎 GY /d͡ʒʲ/g/
No modification	**Adaptation:** From about the 12th–15th century, ≶, 𐲎 GY /d͡ʒʲ/g/ was used for representing /ɟ/, when /ɟ/ replaced /d͡ʒʲ/ in the Hungarian language.	≶, 𐲎 GY /g/d͡ʒʲ/ɟ/
Ligature formation	**None:** Ligature of 𐲙 N /n/ and 𐲎 GY /g/d͡ʒʲ/ɟ/. The sound value of the ligature could be /ng/ based on tis letter name *eng* in the Nikolsburg Relic (*Table 9.2.5-1*).	𐲙‍𐲎 NGY /ng/
No modification	**None:** 𐲩 CH /x/ went out of use since /x/ disappeared from the Hungarian language in the period from the 11th to the 13th centuries. However, there are still traces of /x/ in the 14th century in the (Latin-based) Old Hungarian orthography.	-
Ligature formation	**Latin:** Created by ligating 𐲒 J /j/ and 𐲙 N /n/*ɲ/. It shows the influence of the (Latin-based) Old Hungarian orthography, where *ny* denoted /ɲ/ (*y denoted* /j/ in that time). The earliest version of the ligature of 𐲒 J /j/ and 𐲙 N /n/*ɲ/ was probably 𐲒‍𐲙. Later 𐲒‍𐲙 was simplified to 𐲚. In the Nikolsburg Relic (*Fig. 9.2.5-2*), both can be found. The use of 𐲙 N for /*ɲ/ gradually ended and later 𐲙 N represented only /n/.	𐲒‍𐲙 NJ /nj/, 𐲚 NY /ɲ/
Duplication	**Symmetry:** 𐲕 was created from the duplication of 𐲓 OPEN K /k/. The consonant-pair /nk/ was very frequently used, e.g. *münèkọnc* /myneːkynk/ 'for us'.[226] That could be the reason why it had its own symbol (Nikolsburg, see *Table 9.2.5-1*).	𐲕 UNK /nk/

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[226] MünchK., 12rb; Zelliger 1994, pp. 214–215; Korompay 2003b, p. 291

Glyph-forming method	Application of script evolution principles	Resulting grapheme
Duplication	**Latin:** 𐲮 V was duplicated. The evidence that 𐲪 originated from 𐲮 V /y/u/uː/v/ is the use of 𐲪 U also for /y/ in the Rovash Calendar, see 𐲓𐲪𐲤 /kyʃ/ 'small' (*Fig. 9.2.6-7c*). The earliest occurrence of the glyph 𐲪 is in the undeciphered SHR wall inscription of Berekeresztúr made at the end of 14th century or in the 15th century.[227] Later, the use of 𐲪 U was restricted to /u/uː/.	𐲪 U /u/uː/y/
Duplication	**Latin, Style normalization, Symmetry:** 𐲝 was created from the ligature of 𐲉 E (mirrored glyph) and 𐲉 E. The style of 𐲝 CLOSED OE-UE and 𐲡 EMP is identical; they were probably developed in the same period.[228]	𐲝 CLOSED OE-UE /e/
No modification	**Adaptation:** In the 13th century, the labialization of /e/ resulted /ø/øː/.[229] Later, the same grapheme were used for the both /ø/ and /y/.	𐲞 OPEN OE /ø/øː/y/yː/, 𐲝 CLOSED OE-UE /ø/øː/y/yː/
Ligature formation	**None:** 𐲤‍𐲦 was created from the ligature of the 𐲤 S /ʃ/ and 𐲦 T /t/. The importance of this ligature could be high, since it was used as the abbreviation of the name of the first Hungarian king, Saint Stephen I, in the Rovash Calendar: 𐲤‍𐲦 /ᵋʃtᵃːⁿ/ 'Stephen' (*Table 9.2.6-5*).	𐲤‍𐲦 ST /ʃt/*ʒd/
Duplication	**Style normalization, Symmetry:** 𐲧 was created from the ligature of the original and the mirrored glyph of 𐲦 T /t/. The shape of 𐲧 perfectly followed the design style of 丰 TPRUS (*Table 3.6.4-2*).	𐲧 ENT /nt/
Ligature formation	**None:** Ligature of the 𐲯 Z /z/ and 𐲦 T /t/	𐲯‍𐲦 ZT /zt/*st/

Table 3.6.4-3: The development of SHR ligatures and their phonetic values in the 12th–14th centuries with the most probable topological transformations in their development[230]

In the Old Hungarian linguistic period, the Old Hungarian digraph *st* was pronounced as /ʃt/. Later this pronunciation changed to /ʒd/ as in the following examples: *cuesſti* /kyeʃti/ > *Kövesd* /køveʒd/, *ſegiſti* /ʃegiʃti/ > *Segesd* /ʃegeʒd/, and *Kakaſti* /kakaʃti/ > *Kakasd* /kakaʒd/; all of them are names of Hungarian villages.[231] Moreover, the consonant pair /zt/ shows the result of the *backward assimilation* existing in the Hungarian language according to the voiced/unvoiced sound attributes.[232] Namely, /t/ is voiceless but /z/ is voiced; therefore, /t/ assimilated /z/ to /s/. That is the reason why the Hungarian *zt* is pronounced as /st/. An example of this assimilation is a word from a relic from about 1456: *daghazth* 'he/she kneads', its pronunciation today is /dagast/. Consequently, the reason for creating the ligatures 𐲤‍𐲦 ST and 𐲯‍𐲦 ZT could be that their pronunciations differed from the sound values of their constituents.

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[227] Erdélyi & Ráduly 2010, p. 69

[228] Hosszú 2012a, *passim*

[229] Hosszú 2012a, *passim*

[230] E. Abaffy 2003a, pp. 115–125; 2003b, pp. 301–347; 2003c, pp. 596–609; 2003d, pp. 710–718; 2003e, pp. 789–799; Korompay 2003e; pp. 781–788

[231] E. Abaffy 2003b, pp. 313–314

[232] E. Abaffy 2003b, pp. 310–311

The phonetic systems of SHR consonants and vowels in the 14th century are presented in *Table 3.6.4-4* and *Fig. 3.6.4-1*, respectively.

Place of articulation	Plosive	Nasal	Fricative	Affricate	Liquid
Bilabial	ꟻ /p/ X /b/	ꟼ /m/	ℸ /β/		
Labiodental			Θ,θ /f/ *M /v/		
Alveolar	Y,*Ж,*Ӿ /t/ Y,Ɨ /d/	Ↄ /n/	I /s/ *Ꮸ /z/	*↑ /t͡s/	Λ /l/ −,*H /r/
Post-alveolar			*Φ,Λ,*Ψ/ʃ/ *Y,Λ/ʒ/	*Ц,*↑ /t͡ʃ/	
Palatal or palatalized	*Y,*Ж,*Ӿ /c/ Λ,*=,*Ɨ /ɟ/	*Ↄ,*D/ɲ/	*1 /j/	Λ, *=, *Ɨ /d͡ʒʲ/	*Θ /ʎ/
Velar	*ᛇ,◊,Δ,*↑/k/ *Λ,*=,*Ɨ/g/		*Ӿ /x/ ᛋ /ɣ/		
Laryngeal (glottal)			ᛝ /h/		

Table 3.6.4-4: SHR consonants used in the 14th century

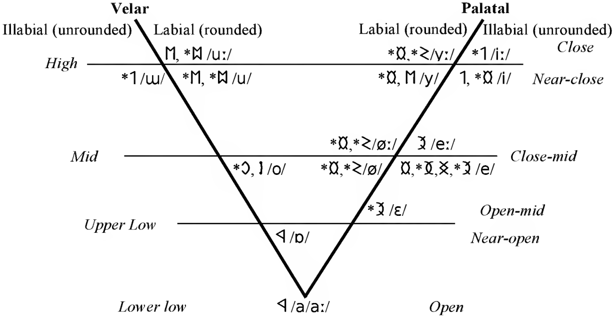

Fig. 3.6.4-1: SHR vowels used in the 14th century

3.6.5. Evolution of SHR—Stage 4: Age of calligraphy (14th–18th centuries)

Beginning in the 14th century, SHR evolved without adopting any new grapheme from any other script. *Table 3.6.5-1* presents the development in the 14th–15th centuries, and *Table 3.6.5-2* indicates changes from the 16th–18th centuries. With the development of the Hungarian language, the need for new rovash graphemes emerged, but new graphemes were selected or developed from the already existing ones. Glyph variants of some SHR graphemes also appeared in use, since paper-based writing became the dominant technology and stimulated the individualization of the glyphs. The development of the Szekely-Hungarian Rovash in the period from the 18th to the 21st centuries is demonstrated in *Ch. 9.*

Glyph-forming method	**Application of script evolution principles**	**Resulting grapheme**
No modification	**Adaptation:** Up to the 14th century, /a/ gradually disappeared (except in some dialects) and /ɒ/ entered into the Hungarian language. Then 𐲁 AA /a/aː/ denoted /ɒ/aː/.	𐲁 AA /ɒ/aː/
Line shifting	**Differing:** The 𐲒 J /ɯ/i/iː/j/ was gradually limited to represent /j/, and one of its glyph variations became used for /i/iː/. Moreover, in the end of the Old Hungarian linguistic period the change /ɯ/>/i/ completed; hence /ɯ/ was not represented by any SHR grapheme.[233]	𐲐 I /i/iː/, 𐲑 II /i/iː/, 𐲒 J /i/iː/j/
No modification	**Adaptation:** 𐲔 OPEN K /k/ was used also for denoting /ɒk/aːk/, probably to shorten the representation of the frequently used /ɒk/ and /aːk/ vowel–consonant pairs. The earliest evidence of such use is the Nikolsburg Alphabet (15th century, see *Table 9.2.5-1*), where the name of this grapheme was *ac* /aːk/. In the Csíkszentmiklós Inscription (1501, see *Fig. 9.2.7-3*) 𐲔 OPEN K represented /ɒk/, and in the Constantinople Inscription (1515, see *Table 9.2.7-2*) 𐲔 OPEN K was consequently used for denoting /aːk/. Sípos stated that there are examples in relics for using 𐲔 OPEN K in syllables with back vowels or at the end of words.[234]	𐲔 OPEN K /k/ɒk/aːk/
No modification	**Adaptation:** The use of 𐲛 O /o/ was adapted to represent the new sound /oː/ as well.	𐲛 O /o/oː/
Slight modification	**Writing technology:** 𐲭 was developed from 𐲬 CLOSED OE-UE /ø/y/yː/, see Kájoni (*Fig. 9.2.8-8*) and Patakfalvi Bible (*Fig. 9.2.9-8*). The background of this development is that the paper-based writing technology made drawing small circles easy.	𐲭, 𐲮 CLOSED OE-UE /ø/y/
Slight modification	**Adaptation, Differing:** Glyph variants of 𐲊 CLOSED E /ɛ/e/eː/ appeared (𐲝: Constantinople, 1515, see *Table 9.2.7-2*; 𐲞: Csíkszentmiklós, 1501, see *Fig. 9.2.7-1*) with the sound value /ø/ due to the labialization of /e/ in the Hungarian language (started from about the 13th century).	𐲝, 𐲞 OE /ø/øː/
Ornamenting	**Writing technology:** Due to paper-based technology, the glyphs became more calligraphic (Book of Mátyás Bél, 1718, *Fig. 9.2.9-1*).	𐲟 OEE /ø/øː/

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[233] E. Abaffy 2003b, pp. 320–321

[234] Sípos, László 2008–2011: *Personal communication*

Duplication	**Symmetry:** Ӿ, ⋇ were generated as glyph variants of X OE /ø/øː/, see Gönczi (about 1680)[235] and Dobai (1753, see *Fig. 9.2.9-5*). Sípos showed the possibility of duplication (seen in case of reptile-like symbols) and turning of X OE in creating ⋇.[236] However, the author of this book presumes that the grapheme X OE /ø/øː/ was extended with a horizontal line through their center.	Ӿ, ⋇ OE /ø/øː/
No modification	**Unification:** Φ US /ʃ/ dropped out of use and ⋀ S /ʃ/ became common, probably due to its being easier to carve/write. In addition, the use of Φ US had the disadvantage of being easily confused with ◊ LY /ʎ/.	-
Slight modification	**Symmetry & Unification:** ⋀ S /ʃ/ was modified to get a symmetrical shape and to follow the envelope curve of Ʌ G and Ѧ L. The symmetrical form appeared around 1400 (Székelydálya, see *Fig. 9.2.4-4*); however, it only became common after the 16th century.	Λ S /ʃ/
No modification	**Adaptation, Differing:** One of the graphemes Ꞁ T /t/c/ and Ẋ TRIPLE TY /c/ were selected for representing the /c/ exclusively.[237] The more commonly used Ꞁ T remained the symbol for /t/, and the less frequently used Ẋ TRIPLE TY became the grapheme for /c/.	Ꞁ T /t/, Ẋ TRIPLE TY /c/
No modification	**Differing:** Different graphemes became used for representing /y/, /u/ and /v/. They are attested to in the 15th century (*Fig. 9.2.6-4*). Ⴖ V /y/u/uː/v/ was restricted to denote only /v/. However, even in the 17th century, there is an example for Ⴖ V representing also /u/ (Bonyhai, see *Fig. 9.2.8-3*)	⌧ CLOSED OE-UE /ø/y/yː/, ⋈ U /u/, Ⴖ V /v/

Table 3.6.5-1: The development of SHR in the 14th–15th centuries with the most probable topological transformations during the development

Table 3.6.5-1 shows the change /d͡ʒʲ/>/ɟ/ of the sound value represented by ǂ GY. However, in the Hungarian *Csango* /t͡ʃaːngoː/ and the Felsőőr (present-day Oberwart, Austria) dialects, this change was different: /d͡ʒʲ/>/d͡ʒ/.[238] The Csangos use the oldest version of the Hungarian language used today. They currently live east of the Carpathians (present-day Romania); however, there is a large Csango diaspore in Hungary as well.

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[235] Sebestyén 1915, p. 112

[236] Sípos, László 2008–2011: *Personal communication*

[237] Vékony 2004a, p. 105

[238] Zelliger, Erzsébet 2010–2011: *Personal communication*

Glyph-forming method	Application of script evolution principles	Resulting grapheme
Rotating line	**Differing, Writing technology:** The 𐲀 appeared as a glyph variant of 𐲁 AA /ɒ/aː/ (Rovash Calendar, see *Sec. 9.2.6*). The original Rovash Calendar was carved into wood, where horizontal lines were not recommended. However, the Rovash Calendar was copied to paper at the end of the 17th c, which could have led to slight modifications in the glyphs.	𐲀 A /ɒ/aː/
Ornamenting	**Writing technology:** Developed from 𐲧 ENT	♈ ANT /nt/
No modification	**Adaptation:** In the Hungarian language the use of /e/ was restricted to some dialects only. Consequently, the 𐲊 CLOSED E /e/eː/ was not in use and the 𐲉 E did not represented /e/ any more.	𐲉 E /ɛ/eː/
Line shifting	**Differing:** The glyph 𐲋 was selected by G.M. Csulyak in 1655 to be used for /eː/ and 𐲉 E started to be only used for /ɛ/.	𐲉 E /ɛ/, 𐲋 EE /eː/
Ornamenting	**None:** Glyph variants of the SHR 𐲌 F /f/ appeared.	𐲌, ⊗, ⊖, ⊕ F /f/
Ornamenting	**Adaptation:** Glyph variants of 𐲗 LY appeared. Moreover, from the 16th century, /ʎ/ started to disappear from the Hungarian language. However, the sound /ʎ/ survived in some dialects, like the Paloc (used in North Hungary).[239] Currently, 𐲗 LY and its glyph variants are generally used with /j/. It is noteworthy that in the Latin-based Old Hungarian orthography, the use of *ly* (with the current sound value /j/) remains in the spelling of several words.	𐲗, 𐲗, 𐲗, 𐲗 LY /j/ʎ/
Mirroring, rotating	**None:** The mirrored glyph of 𐲞 OPEN OE /ø/øː/y/yː/ was developed.	𐲭 OPEN UE /øː/y/yː/
Duplication	**Latin, Symmetry:** Bonyhai created a Szekely-Hungarian Rovash grapheme for the equivalent of the Latin *q* as the duplication of 𐲓 K /k/ in 1629 (*Table 9.2.8-2*).[240]	𐲓𐲓 Q /k/
Rotating line	**None:** Presumably the grapheme 𐲨 TRIPLE TY /c/ was modified (Csíkszentmiklós, *Fig. 9.2.7-2*).	𐲨 FORKED TY /c/
No modification	**None:** The grapheme 𐲨 SHARP TY survived in the 15th or 16th century (Bögöz, *Fig. 9.2.7-6*) and it is used for representing /c/.	𐲨 SHARP TY /c/
Ligating	**Latin:** Bonyhai created a glyph for the Latin X /ks/ as the ligature of 𐲓 K /k/ and 𐲤 S /ʃ/ in 1629. It shows the influence of the Old Hungarian orthography, where *s* denoted /s/ as well as /ʃ/.[241]	𐲓𐲤 X /ks/

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[239] E. Abaffy 2003c, pp. 597–598; 2003d, pp. 711–713; Prószéky 2009, pp. 7–9

[240] Sípos, László 2008–2011: *Personal communication*

[241] Rumi, Tamás 2008–2011: *Personal communication*

No modification	**None:** Bonyhai used the glyph of 𐲑 II for creating 𐲑 Y, which denoted both /i/ and /j/ (like *y* in the Old Hungarian orthography) in 1629. Bonyhai followed the earlier tradition of SHR, where there were no individual graphemes for /i/ and /j/ (*Table 3.6.2-6*).	𐲑 II /i/j/, 𐲑 Y /i/j/

Table 3.6.5-2: The development of SHR in the 16th–18th centuries with the most probable topological transformations during the development

The system of SHR consonants in the 18th century is presented in *Table 3.6.5-3*, where the grapheme to the left in the cell is *voiceless* and to the right is *voiced*. This representation is based on the linguistic system of the consonants in the Middle Hungarian period.[242]

Place of articulation	Plosive	Nasal	Fricative	Affricate	Liquid
Bilabial	𐲠 /p/ 𐲂 /b/	𐲘 /m/			
Labiodental			𐲌 /f/ 𐲮 /v/		
Alveolar	𐲦 /t/ 𐲇 /d/	𐲙 /n/	𐲥 /s/ 𐲯 /z/	𐲄 /t͡s/	𐲖 /l/ 𐲣,𐲢 /r/
Postalveolar			𐲤 /ʃ/ 𐲰 /ʒ/	𐲆 /t͡ʃ/	
Palatal	𐲨,𐲨,𐲨 /c/ 𐲎 /ɟ/	𐲚 /ɲ/	𐲑,𐲒 /j/		𐲗 /ʎ/
Velar	𐲓,𐲔 /k/ 𐲍 /g/				
Laryngeal (glottal)			𐲏, 𐲩 /h/		

Table 3.6.5-3: The phonetic system of SHR consonants used in the 18th century

SHR vowels of the 18th century are presented in the phonetic system (*Fig. 3.6.5-1*).[243]

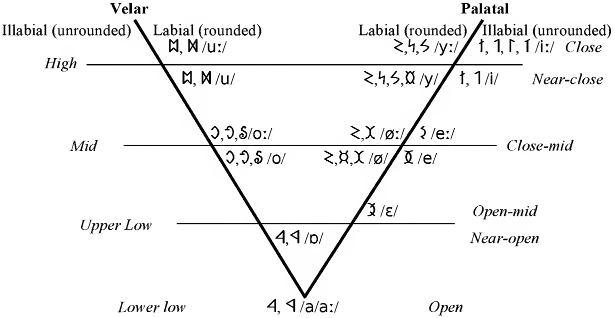

Fig. 3.6.5-1: The graphical representation of the phonetic system of SHR vowels used in the 18th century, denoting some glyph variants of each grapheme

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[242] E. Abaffy 2003c, p. 600

[243] E. Abaffy 2003c, p. 609

3.6.6. Influences on the development of Szekely-Hungarian Rovash

A) Influence of the Latin-based orthography on Szekely-Hungarian Rovash

The Latin-based orthographies affected SHR in all periods of its history, as it is summarized in *Table 3.6.6-1*.[244] Clearly the most influential was the *Old Hungarian orthography* (*Table C-2*). However, in the 9th century, the Latin orthography of the missionaries of Salzburg might have affected SHR as well.[245] In the second column of *Table 3.6.6-1*, the dates of the first occurrences of the orthographical features in Hungary are listed. However, in some cases, the first occurrence of an orthographical feature in *Europe* is marked in brackets as well.

Feature of the Latin-based orthography	**Occurrence of the feature in Hungary**	**Effect on the Szekely-Hungarian Rovash**	**Earliest example**
The roles of the *u* and *v* letters were practically identical;[246] they represented (among others) /u/, /y/, and /v/.[247]	11th – beg. 15th c. (in Europe from the 10th)	The SHR 𐲮 V originally represented /y/ (Vargyas, see *Fig. 9.2.3-1b*). Later, 𐲮 V was used for /u/uː/v/ as well (*Table 3.6.4-1*). Sebestyén pointed out that the development of 𐲮 V /v/ was influenced by the fact that in the earliest time the Latin graphemes *u* and *v* were frequently interchanged in the Old Hungarian orthography.[248]	13th-14th c.
Letter *i* denoted /i/ and /j/ in the 9th century	11th – 16th c.[249] (in Europe from the 9th)	The SHR 𐲒 J represented /i/ and /j/, e.g. relics of Vargyas (*Fig. 9.2.3-1b*), Homoródkarácsonyfalva (*Fig. 9.2.3-2c*), Constantinople (*Fig. 9.2.7-4a*), Rovash Calendar (*Fig. 9.2.6-4*), Dési Alphabet (*Fig. 9.2.9-4*, in the ligature "*si*"). Later, the SHR 𐲒 J was restricted to represent /j/.	13th-14th c.
Letters *u*, *v*, and *w* denoted /u/.[250] Sporadically *vv* represented /uː/, e.g. *vvl* /uːl/ 'such'.[251] *w* and *uu* denoted /yː/, e.g. *wt* /yːt/ 'him'[252]; *mezuul* /meːzyːl/ 'like honey'.[253]	11th–16th c. (in Europe from the 10th)	The SHR 𐲪 U /u/uː/y/ was created by *duplicating* the SHR 𐲮 V /u/uː/y/v/ (*Table 3.6.5-1*).	14th–15th c.

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[244] Vékony 2004a, p. 23

[245] Vékony 2004a, pp. 104–105

[246] Korompay, Klára 2010–2011: *Personal communication*

[247] Korompay 2003b, p. 288, 291

[248] Sebestyén 1909, pp. 286–287

[249] Korompay, Klára 2010–2011: *Personal communication*

[250] Korompay 2003b, p. 291; Korompay, *under publication*

[251] HB

[252] HB

[253] ÓMS

Feature of the Latin-based orthography	**Occurrence of the feature in Hungary**	**Effect on the Szekely-Hungarian Rovash**	**Earliest example**
Letter *c* represented /k/ if it was employed near any back vowel.	After the 10th c.	The 𐲔 OPEN K /k/ was called *ac* in the Nikolsburg Relic. The interesting feature of the name *ac* is the difference from the majority of the letter-names in this relic: they started with *e* and not *a* (*Fig. 9.2.5-2*). The letter-name *ac* meant ‘k’.	15th c.
Letter *c* denoted /k/ besides /t͡s/.[254] Moreover, in the Latin-based orthography *nc* was frequently used as the abbreviation of *nec*.[255]	11th–16th c. (in Europe from the 10th)	The SHR 𐲅 NC (ligature of 𐲙 N and 𐲄 C) might represent /nᵉk/ (Rovash Calendar, see *Table 9.2.6-9*).	1690, origin: 12th–15th c.
Letter *c* denoted /t͡ʃ/ as well, e.g. *gimilcictul* /d͡ʒʲimilt͡ʃektyːl/ ‘by fruits’.[256]	12th c.	The SHR 𐲄 C /t͡s/ denoted a few times /t͡ʃ/ as well, despite the fact that 𐲆 CS /t͡ʃ/ also existed in SHR; e.g. Bonyhai (*Table 9.2.8-1*) and Kájoni (*Fig. 9.2.8-9*).	1627, 1673, origin: 12th–15th c.
Letter g denoted /g/ and /d͡ʒʲ/ as well.[257]	11th – beg. 14th c.	The SHR 𐲍 G /g/ represented /ɟ/ also, e.g. Rovash Calendar: 𐲉𐲍𐲒𐲦𐲘 /ɛd͡ʒʲitᵒm/ ‘Egypt’ (*Table 9.2.6-7*).	1690, origin: 12th–15th c.
/ʒ/ emerged in the Hungarian language in the 12th c. and it was generally denoted by *s* up to the early 19th c. However, sometimes it was represented by *z*.[258]	From 12th c.[259]	Earlier, there were three SHR graphemes for the sound /ʃ/: 𐲤 S, 𐲲 US, and 𐲰 ZS. In the Székelydálya Relic, 𐲤 S represented /ʒ/ (*Fig. 9.2.4-1*). Later the 𐲰 ZS was selected for /ʒ/, e.g. Nikolsburg Relic (*Fig. 9.2.5-2*).	15th c.
Digraph *ny* denotes /ɲ/. The background of this digraph is that /ɲ/ evolved in several words from the consonants /n/+/j/.[260] The letter *y* denoted /j/ in the Old Hungarian orthography.[261]	End of the 12th – present-day	The 𐲚 NJ /nj/ was developed from the ligature of 𐲙 N /n/*ɲ/ and 𐲒 J /j/, e.g. Nikolsburg, (*Fig. 9.2.5-2*), then it was simplified: 𐲚 NJ /nj/ > 𐲚 NY /ɲ/.	15th c.

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[254] Korompay 2003b, p. 290

[255] Zelliger, Erzsébet 2010–2011: *Personal communication*

[256] Korompay 2003b, p. 290; HB

[257] Korompay 2003b, p. 290

[258] Korompay 2003b, p. 285, p. 291

[259] Korompay, Klára 2010–2011: *Personal communication*

[260] A. Molnár 2003, p. 199

[261] Korompay 2003b, p. 286

Feature of the Latin-based orthography	Occurrence of the feature in Hungary	Effect on the Szekely-Hungarian Rovash	Earliest example
The sound /t͡ʃ/ was denoted by *ci*, e.g. from 1529: *ciak* /t͡ʃɒk/ 'only'[262] and by *cy*, e.g. from 1540: *Cÿak* /t͡ʃɒk/ 'only'.[263]	16th c.	The SHR 𐲑𐲄 CI denoted /t͡ʃ/ despite the fact that the SHR 𐲆 CS representing /t͡ʃ/ also existed, e.g. Bonyhai (*Table 9.2.8-1*).	1627
Digraph *ly* denoted /ʎ/, e.g. in 12th c. *ullyetuk* /øʎʎeːtyk/ 'kill' (plural imp.)[264] and in 1530 *kÿralÿtul* /kiraːʎtoːl/ 'from king'.[265] Digraph *li* also denoted /ʎ/ in 1539, e.g. *olian* /oʎan/ 'such'.[266]	12th c., stabilized in 17th c.	The SHR 𐲑𐲖 LI /ʎ/ (pair of 𐲖 L /l/ and 𐲑 II /i/) was used instead of 𐲗 LY /ʎ/, e.g. Bonyhai (*Fig. 9.2.8-2b*).	1627
Latin grapheme *q* denotes /k/ before *u* or *v*.	17th c.	The SHR 𐲓𐲓 Q /k/ was developed from the duplication of 𐲓 K /k/,[267] e.g. Bonyhai (*Table 9.2.8-2*). The final glyph of 𐲓 Q /k/ was developed by Vér in 2001 (*Fig. 9.2.12-1*).	1629
Letter *x* denoted the cluster /ks/.	From Medieval Times	The SHR 𐲓𐲤 X /ks/ was developed from the ligature of 𐲓 K /k/ and 𐲤 S /ʃ/s/, e.g. Bonyhai (*Table 9.2.8-2*). 𐲓𐲥 X /ks/ was developed from the ligature of 𐲓 K /k/ and 𐲥 SZ /s/, e.g. Bárczy (1971, see *Table 9.1.4-1*).	1629
Letter *w* (developed from the duplication of *v*) denotes /v/ and historically it represented /yː/ as well.[268]	Since 11th c.[269]	The SHR 𐲮 W was developed from 𐲮 V /v/, e.g. Carving knife of scouts (*Fig. 9.2.11-1*). 𐲮𐲮 W /v/ was developed from the duplication of 𐲮 V /v/, e.g. B. Pál (1992, see *Fig. 9.2.11-10*).	1930s
Letter *y* denotes /i/j/.	After 10th c.	The SHR 𐲑 Y /i/j/ had an identical glyph to 𐲑 II /i/, e.g. Bonyhai (*Table 9.2.8-2*). 𐲒 Y /i/j/ was developed based on the shapes of 𐲑 II /iː/ and 𐲒 J /j/, e.g. Carving Knife of Scouts (*Fig. 9.2.11-1*). 𐲐𐲒 Y /i/j/ was developed from the ligature of 𐲐 I /i/ and 𐲒 J /j/, e.g. Bárczy (1971, see *Table 9.1.4-1*).	1930s (1629)

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[262] Hegedűs & Papp 1991, p. 176

[263] Hegedűs & Papp 1991, p. 474; Korompay 1999, pp. 198–204

[264] ÓMS, Korompay 2003b, p. 286

[265] Hegedűs & Papp 1991, p. 208

[266] Hegedűs & Papp 1991, p. 455

[267] Sípos, László 2008–2011: *Personal communication*

[268] Korompay 2003b, p. 291

[269] Korompay, Klára 2010–2011: *Personal communication*

Feature of the Latin-based orthography	**Occurrence of the feature in Hungary**	**Effect on the Szekely-Hungarian Rovash**	**Earliest example**
Digraph *dz* denotes /d͡z/. Earlier /d͡z/ was denoted by *ch*, *cz*, *dz*, and *dzc*.[270] J. Tsétsi identified it as a phoneme and denoted /d͡z/ by *dz* in 1708.[271]	16th c.[272]	The 𐳯𐳇 DZ /d͡z/ was developed from the ligature of 𐳇 D /d/ and 𐳯 Z /z/, e.g. Verpeléti (*Fig. 9.2.11-2b*). Another glyph 𐳇𐳯 DZ /d͡z/ was developed by Vér in 2001 (*Fig. 9.2.12-1*).	1935
Trigraph *dzs* denotes /d͡ʒ/. From the 16th c., *ds* denoted /d͡ʒ/.[273] J. Tsétsi identified /d͡ʒ/ as a phoneme and he denoted it by *ds* in 1708.[274]	From 1922[275]	The 𐳰𐳇 DZS /d͡ʒ/ was developed from the ligature of 𐳇 D /d/ and 𐳰 ZS /ʒ/, e.g. Verpeléti (*Fig. 9.2.11-2b*). Another glyph 𐳰𐳇 DZS /d͡ʒ/ was developed by Balás in 1988 (*Fig. 9.2.11-7*).	1935

Table 3.6.6-1: The influences of the Latin-based European and Old Hungarian orthographies on Szekely-Hungarian Rovash script

B) The geographical distribution of SHR relics

The Szekelys were organized for guarding the borders of Hungary from the 10th century onwards. In the 12th century, some of them migrated to the eastern and southeastern borders, then to the current territory of Szekelyland (present-day Romania). Accordingly, Szekely-Hungarian Rovash relics appeared in Szekelyland from the end of the 12th century. In medieval times, the center of the geographical distribution of SHR relics was in Udvarhely Seat (seat: self-governing historical areas of Szekelys in Szekelyland) that was established by the Szekelys in the middle of the 12th century, according to L. Benkő.[276] The relation of the original and the current location of each group of Szekelys are presented in *Table 3.6.6-2*, also denoting the rovash relics found in each Szekely seat.[277] According to L. Benkő, the Hungarian dialects used in Szekelyland are related to the dialects used in different areas of Transdanubia and other parts of the Carpathian Basin.[278]. One of the numerous linguistic proofs of L. Benkő's statement is the name of Csík Seat (Szekelyland) that originated from the Csík Brook near the Rába River in southern Vas County (West Transdanubia, Hungary).[279]

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[270] E. Abaffy 2003b, pp. 314–315
[271] Tsetsi 1708; Korompay 2003c, p. 592, 2009, pp. 7–10
[272] Korompay 2003e, p. 787
[273] Korompay 2012
[274] Tsetsi 1708; Korompay 2003c, p. 592, 2009, pp. 7–10
[275] Korompay 2003e, p. 781
[276] Benkő, L. 1990, pp. 109–122
[277] Benkő, L. 1990, pp. 114–115;
[278] Benkő, L. 1967, pp. 29–48, 1991, pp. 59–60; Botár 2008, p. 74; Szöllősy 2004
[279] Benkő, L. 1990, p. 114; 1998, pp. 135–136

Location before 12th c.	**Place and date of rovash relic**	**Location from the 12th–13th c. to present**	**Place and date of rovash relic**
Northwest medieval Hungary: Pozsony, Moson, and Sopron counties *Southwest medieval Hungary:* Őrség (Őrvidék) 'Border Zone' (*Map 3.6.1-5, Image D-4*) [280]	-	Maros Seat	- Erdőszentgyörgy, turn of the 14th c.[281] - Berekeresztúr, 15–16 pieces of rovash relics from the end of the 14th to the second half of the 16th c., e.g. *Fig. 9.2.7-9*[282] - Kibéd (four relics), 16th – ca. 18th c.[283] - Nyomát, 18th c.[284] - Hármasfalu (Székelyszentistván), beg. of 20th c.[285]
Southwest medieval Hungary: Őrség (Őrvidék) 'Border Zone', the Kerka Valley[286]	Bodrog, around 900, see *Fig. 9.2.2-1* (*Nearby, in Somogy County*)	Sepsi, Orbai, Kézdi, Kászon, Alcsík, Felcsík, Gyergyó seats	- Gelence, 1497, *Fig. 9.2.5-3* - Kilyén, 15th c. – beg. of 16th c., *Fig. 9.2.5-4* - Csíkszentmiklós, 1501, *Fig. 9.2.7-1* - Dálnok, 1526, *Fig. 9.2.7-5b* - Szárhegy (from Kájoni), 1673, *Fig. 9.2.8-9* - Rovash Calendar (originated from around Gyergyó, ca. 12th c.), 1690, *Sec. 9.2.6*
Northwest medieval Hungary: Pozsony and Trencsén counties	-	Udvarhely Seat	- Vargyas, 12th-13th c., *Fig. 9.2.3-1a,b* - Homoródkarácsonyfalva, stone inscription, ca. 13th c., *Fig. 9.2.3-2c*
The mouth of the Drava River in South medieval Hungary: Tolna, Baranya, and Valkó counties	-		- Korond, end of 12th – beg. of 13th c., *Sec. 9.2.3* - Székelydálya, around 1400, *Fig. 9.2.4-4* - Székelyderzs, 15th-16th c., *Fig. 9.2.5-1* - Bögöz, 1480-1530, *Fig. 9.2.7-6* - Rugonfalva, ca. 16th-17th c.[287] - Homoródkarácsonyfalva, wall inscription, 1625[288] - Siménfalva,1627, *Fig. 9.2.8-2* - Énlaka, 1668, *Fig. 9.2.8-8*

Table 3.6.6-2: Left two columns: the regions Szekelys had lived in and the relics found there. Right two columns: their current locations in Szekelyland with the related SHR relics

The present author explored the relation of two villages of Udvarhely Seat (*Vargyas* and *Homoródkarácsonyfalva*) to Northwest medieval Hungary (*Table 3.6.6-2*). Near Vargyas Village there is a hill called *Trencsén*;[289] its name is identical to the name of *Trencsén* County in Northwest medieval Hungary of the 12th century. The first component of the name of Homoródkarácsonyfalva Village (*Homoród*) exists as a geographical name in Pozsony County (present-day Slovakia) as well.[290] The geographical name and the historical background data prove that the inhabitants of the two villages migrated from Northwest medieval Hungary.

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[280] Benkő, L. 1999, p. 53

[281] Bözödi 1935; Ráduly 2007b, p. 3; Ráduly 2007c, p. 9

[282] Erdélyi & Ráduly 2010, pp. 65–78

[283] Ráduly 1992a, p. 3; Ráduly 2007d, pp. 2–3

[284] Ráduly 2008a, pp. 67–69

[285] Ráduly 2008a, pp. 72–74

[286] Benkő, L. 1999, p. 53

[287] Benkő, E. 1991, p. 20; Ferenczi 1992, pp. 57–58; Benkő E. 1994: 165; Benkő E. 1997: 181-182; Ráduly 2008a, pp. 64–66

[288] Mihály 2007

[289] Orbán 1868–1873, XLVII. Vargyas

Two significant SHR relics were found in Vargyas (*Fig. 9.2.3-1a,b*) and in Homoródkarácsonyfalva (*Fig. 9.2.3-2a*). The Vargyas Inscription contains two loan graphemes: one borrowed from the Greek (Ø DIAGONAL F /f/, which is similar to the Glagolitic Ⱚ FITA, see *Table 3.6.3-1*), another from the Glagolitic (𐳛 CIRCLE ENDED O /o/, see *Table 3.7.2-1*). The Homoródkarácsonyfalva Relic contains one (Ø DIAGONAL F /f/). The cause of the appearance of these Glagolitic-related graphemes is obvious: in the 9th century, the areas of Trencsén and Pozsony counties belonged to the Duchy of Moravians, where the Glagolitic script was extensively used from 863 to 886. Being close in time to the emerging of SHR, the evangelized Szekelys of these areas surely obtained a certain Glagolitic cultural impression (*Map 3.6.1-2*). However, the counties Pozsony and Trencsén were outside of Pannonia, where the majority of Szekelys came from. Therefore, these graphemes were only locally used and went out of use very soon, indicating that the majority of the Szekelys did not experience significant Glagolitic influence. These facts support the proposition that in Pannonia the Glagolitic script had far less influence and the Slavic population was lower than in Moravia. It is perfectly in accordance with the ethnic map of the Carpathian Basin in the 11th century (no data is available from an earlier time, see *Image D-5*).

C) Cluster analysis of significant Rovash alphabets and relics

A mathematical statistical method was applied for some significant Szekely-Hungarian Rovash relics, which are listed in *Table 3.6.6-3*.

Abbreviation	Name	Date
NIK	Nikolsburg Alphabet *(Fig. 9.2.5-2)*	ca. 15th c.
BOL	Bologna Rovash Calendar *(Figure 9.2.6-5)*	ca. 15th c. (17th c. copy)
CSI	Csíkszentmiklós Inscription *(Fig. 9.2.7-3)*	1501
CON	Constantinople Inscription *(Fig. 9.2.7-4a)*	1515
RUD	Ioannis Thelegdi: Rudimenta *(Fig. 9.2.7-7a,b)*	1598
MIS	Two alphabets of István Miskolczi Csulyak *(Fig. 9.2.8-5)*	between 1610 and 1645
AAK	Ancient Alphabet and Sentences by Kájoni *(Fig. 9.2.8-9)*	1673
AKR	Alphabet by Kájoni based on the Rudimenta *(Fig. 9.2.8-10)*	1673
MAR	Alphabet found in the manuscript of Marsigli *(Fig. 9.2.6-4)*	17th c.
BOD	Rovash inscriptions of Péter Bod *(Fig. 9.2.9-3a)*	1739
DES	Alphabet by Dési *(Fig. 9.2.9-4)*	1753
PAT	Patakfalvi Bible *(Fig. 9.2.9-8)*	between 1776 and 1785

Table 3.6.6-3: Szekely-Hungarian Rovash relics involved into the cluster analysis and their abbreviations

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[290] Sófalvi 2005, p. 48

Based on the comparison of the graphemes of the rovash alphabets, the similarity of the rovash alphabets was defined. After this, a data matrix was calculated, which describes the distance between the selected rovash relics as objects in the sense of the difference of their glyphs. To obtain the distance matrix, the Sokal-Michener distance metric was applied (*Table 3.6.6-4*).[291]

Relic	NIK	MAR	BOL	RUD	CSI	CON	MIS	AAK	AKR	BOD	DES	PAT
NIK												
MAR	44%											
BOL	53%	69%										
RUD	50%	71%	63%									
CSI	55%	68%	55%	82%								
CON	64%	73%	44%	91%	100%							
MIS	62%	67%	52%	100%	79%	86%						
AAK	39%	39%	43%	43%	32%	0%	48%					
AKR	60%	70%	61%	93%	86%	100%	95%	39%				
BOD	57%	67%	57%	97%	86%	100%	95%	39%	97%			
DES	47%	67%	57%	97%	82%	89%	100%	48%	89%	93%		
PAT	88%	35%	47%	41%	47%	67%	41%	35%	47%	47%	41%	

Table 3.6.6-4: The distance matrix of the objects in the cluster analysis

A hierarchical cluster analysis was carried out based on the distance matrix,[292] see *Table 3*, where the *S* denotes the *Minimal Similarity*. The *S* Minimal Similarity means the error threshold and it is the arithmetic mean of the distances of the elements belonging to the appropriate cluster. Depending on the actual value of the *S* error threshold, the elements are clusters differ, see *Table 3.6.6-5*.

S [%]	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
88%	AAK	NIK, PAT (88%)	RUD, CSI, CON, MIS, AKR, BOD, DES (92%)	BOL	MAR
86%	AAK	NIK, PAT (88%)	MAR, RUD, CSI, CON, MIS, AKR, BOD, DES (86%)	BOL	-
80%	AAK	NIK, PAT (88%)	MAR, BOL, RUD, CSI, CON, MIS, AKR, BOD, DES (80%)	-	-

Table 3.6.6-5: The result of the cluster analysis depending on the value of the *S*.

Each *S* value can be accepted, which gives interpretable clusters. *Fig. 3.6.6-1* presents a graphical representation of various cluster structures in case of some similarity values.

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[291] Sokal & Michener, 1958, pp. 1409-1438

[292] Hastie et al., 2009, pp. 520-528

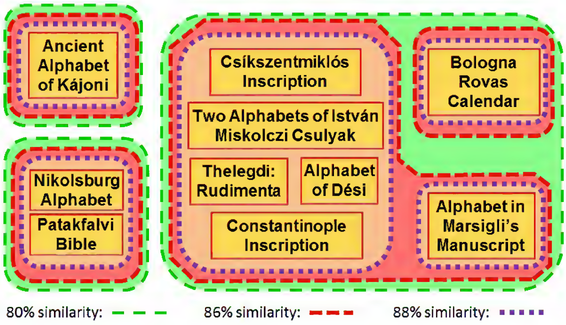
Ancient Alphabet of Kájoni
Nikolsburg Alphabet
Patakfalvi Bible
Csíkszentmiklós Inscription
Two Alphabets of István Miskolczi Csulyak
Thelegdi: Rudimenta
Alphabet of Dési
Constantinople Inscription
Bologna Rovas Calendar
Alphabet in Marsigli's Manuscript
80% similarity:
86% similarity:
88% similarity:

Fig. 3.6.6-1: The clusters of the selected Szekely-Hungarian Rovash relics.

Fig. 3.6.6-1 presents some important ties among the selected Szekely-Hungarian Rovash relics. One of them is the significant relation between the Nikolsburg alphabet and the Patakfalvi Bible. This relation proves that in Szekelyland, there was a tradition of the Rovash script being independent from the followers of the first Rovash textbook named Rudimenta (*Fig. 9.2.7-7a,b* and *Fig. 9.2.7-8*). Another important consequence the isolation of the ancient alphabet by Kájoni from the other relics. This supports that this relics preserved a very old tradition of the Szekely-Hungarian Rovash.

3.7. Relations between the Rovash and the Glagolitic scripts

3.7.1. Rovash roots of the Glagolitic alphabet

There are several theories about the invention of the Glagolitic alphabet. The *Jerome theory* attributes the origin of the Glagolitic script to *Saint Jerome*, the *Church Doctor* (died ca. 420). Saint Jerome was born in the Dalmatian city of Stridon, where Slavic people settled in the 6th–7th centuries.[293] M. Hocij associated the Jerome theory to *Aethicus' Cosmography* (for more information about Aethicus' Alphabet see *Sec. 7.2.7*).[294] As another approach, P. Skok stated that the Glagolitic script developed on Croatian lands evangelized from Aquileia in the 8th–9th centuries.[295] G.F. Turchaninov was the first scholar who showed the similarity of SR to the Glagolitic and the Cyrillic scripts. G. Vékony demonstrated that the Glagolitic script had a strong tie to Carpathian Basin Rovash.[296] According to I. Vásáry, there is a link between Glagolitic and Szekely-Hungarian Rovash.[297] Vékony assumed that the Glagolitic script had to be completed in the Carolingian Pannonia between 866 and 875. In addition, McDaniel also concluded: "*the earliest use of Glagolitic script was surely in Pannonia*".[298]

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[293] Pohl 1988, p. 240, p. 261, p. 320
[294] Hocij 1940, pp. 509–600
[295] Skok 1953
[296] Vékony 1986a; Vékony 2004a, p. 235
[297] Vásáry 1974, p. 169
[298] McDaniel 2004, p. 33

The author of this book assumes that the Slavic population in the border region of the Late-Avar Khaganate used the Carpathian Basin Rovash script. Saints Cyril and Methodius probably redesigned these rovash graphemes, when they wrote the Christian texts in Slavic language. This redesigned Carpathian Basin Rovash with some additional other characters (e.g. Greek θ THETA /θ/) is known as Glagolitic script. This redesign procedure surely happened in relation to the evangelization of the Duchy of Moravians and Duchy of Mosaburg (*Map 3.6.1-2)*.

App. B lists the supposed historical milestones of the Glagolitic script. *Table 3.7.1-1* demonstrates the ties of the Rovash scripts to the Glagolitic script.[299]. The glyphs of the Glagolitic script are generally from Hersak.[300] The glyph Ⱀ of the Glagolitic NASH /n/ɲ/ is from the book of Rocca,[301] the glyph Ⱀ is from the Valun Tablet,[302] and the glyph Ⱀ is from the Baska Tablet.[303]

Carpathian Basin Rovash	**Proto-Rovash**	**Steppean Rovash**	**Szekely-Hungarian Rovash**	**Glagolitic**
*ʎ FORKED G / g/, *Aethicus' glyph variant:* ᛋ	(*There is not a cognate glyph in the relics*)	ʎ FORKED G /g/	(*Its later form:* 𐲍 G /g/)	Ⰳ, Ⰳ GLAGOLI /g/
(*There is not a cognate glyph in the relics*)	∩ ARCHED D /d/di/	∩ ARCHED D /d/ð/d͡ʒ/	(*There is not a cognate glyph in the relics*)	Ⰴ DOBRO /d/
*϶ DIAGONAL E /*a/*ɛ/ *Aethicus' glyph variant:* ꭓ	϶ DIAGONAL E /ɛ/	ʒ TRIPLE E /ɛ/e/	(*Its later form:* 𐲉 E /ɛ/)	Ⰵ JEST /ɛ/ > Ⱗ YENSЬ /jɛ̃/
ȝ OPEN Z /z/ *Aethicus' glyph variants:* Ƶ, Ƶ	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	𐲯 Z /z/	Ⰸ ZEMLJA /z/
*ɿ CIRCLE ENDED I /i/, *Aethicus' glyph variant:* ᚼ	ɿ CIRCLE ENDED I /i/	ɿ CIRCLE ENDED I /i/ï/	(*There is not a cognate glyph in the relics*)	Ⰹ, Ⰺ IZHE /i/j/
1, *Г ANGLED I /i/	1 ANGLED I /i/ï/e/	1 ANGLED I /i/e/	1 J /i/j/	Ⰻ I /i/j/
𐲓 OPEN K /k/	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	𐲓 OPEN K /k/	Ⰽ, Ⰽ KAKO /k/
ʅ SIMPLE L /l/	ʅ SIMPLE L /l/	ʅ SIMPLE L /l/	(*There is not a cognate glyph in the relics*)	Ⰾ LJUDIE /l/ʎ/
Ↄ N /n/ɲ/, ᑐ SHARP N /n/	Ↄ N /n/, ϟ, ϶ FORKED N /n/	Ↄ N /n/, ϟ, X FORKED N /n/	𐲙 N /n/*ɲ/	Ⱀ, Ⱀ, Ⱀ, Ⱀ NASH /n/ɲ/

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[299] Vékony 1986a

[300] Hersak 1998

[301] Rocca 1591, pp. 160-161

[302] Fučić 1971, Table II

[303] Fučić 1971, Table IV

Carpathian Basin Rovash	**Proto-Rovash**	**Steppean Rovash**	**Szekely-Hungarian Rovash**	**Glagolitic**
OPEN O /o/u/	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	𐲛 O /o/u/	Ⱁ ON /ɔ/ *Its descendants:* > Ⱉ OT /ɔ/ > Ⱘ ONSЬ /ɔ̃/ (*ligature with* Ⱔ ES (Ensь) /ɛ̃/); > Ⱆ UK /u/ (*duplication of* Ⱁ ON *or ligature of* Ⱁ ON /ɔ/ *and* CBR ARCHED Q /q/ *or* CBR ARCHED K /k/)
SIMPLE P /p/, FORKED P /p/	SIMPLE P /p/	SIMPLE P, FORKED P /p/	𐲠 P /p/	Ⱂ POKOJ /p/
(*There is not a cognate glyph in the relics*)	𐲢 R /r/	R /r/	𐲢 R /r/	Ⱃ RCI /r/
𐲥 SZ /s/	𐲥 SZ /s/	𐲥 SZ /s/	𐲥 SZ /s/	Ⱄ SLOVO /s/
CLOSED T /t/	CLOSED T /t/	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	Ⱅ TVRDO /t/
SHARP CH /x/, *Aethicus' glyph variant:*	(*There is not a cognate glyph in the relics*)	SHARP CH /h/x/	(*There is not a cognate glyph in the relics*)	Ⱈ KHER /x/
(*There is not a cognate glyph in the relics*)	CIRCLE ENDED SH /ʃ/	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	Ⱌ CI /t͡s/ (*The rovash glyph was maybe mirrored vertically*)
* CS /*t͡ʃ/, *Aethicus' glyph variant:*	CS /t͡ʃ/	CS /t͡ʃ/s/	𐲆 CS /t͡ʃ/	Ⱍ CHRV /t͡ʃ/
ARCHED UE /y/*ø/, *Aethicus' glyph variants:*	(*There is not a cognate glyph in the relics*)	ARCHED UE /ø/y/	(*There is not a cognate glyph in the relics*)	Ⱏ JER /ĭ/, Ⱐ JERJ /ŭ/
(Aethicus) LY /j/ʎ/, *or* CLOSED J /j/ʎ/	CLOSED J /j/	CLOSED J /j/	𐲗 LY /ʎ/	Ⱓ JU /ju/
CLOSED S /ʃ/, *Aethicus' glyph variant:*	(*There is not a cognate glyph in the relics*)	(*There is not a cognate glyph in the relics*)	𐲲 US /ʃ/	Ⰶ ZHIVETE /ʒ/

Table 3.7.1-1: Relationships between the Rovash and the Glagolitic scripts

The Glagolitic Ⰽ KAKO /k/ is from the book of Rocca.[304] According to Vékony, the specific shape of the CBR or SR ꝗ CIRCLE ENDED I /i/ï/ with the small circle was the ancestor of the Glagolitic Ⰺ, Ⰹ IZHE /i/j/ and the mirrored glyph of the PR ᐊ CIRCLE ENDED SH /ʃ/ was used for the Glagolitic Ⱌ CI /t͡s/. These rovash graphemes definitely existed before the estimated birth of the Glagolitic alphabet; therefore, these rovash glyphs could have contributed to the concept of using small *circles* in Glagolitic graphemes.

The CBR 1, *ſ ANGLED I /i/ > Glagolitic Ⰻ I /i/j/ relation is result of Rumi in 2012.[305] It is noteworthy that the both SHR 1 J /i/j/ and Glagolitic Ⰻ I /i/j/ have the sound value /j/, as opposed to the PR, CBR, and SR 1, *ſ ANGLED I, which did not represent /j/. According to the present author, this relation supports the common origin of the Szekely-Hungarian Rovash and the Glagolitic scripts.

In 2009, M. B. Szőke discovered a bottle fragment with a cross sign and two Glagolitic graphemes in Zalavár, Hungary (Mosaburg in the 9th century, see *Fig. 3.7.1-1*).[306] The two graphemes are the Glagolitic Ⱁ ON /ɔ/ and Ⰹ IZHE /i/j/. Based on *Fig. 3.7.1-1*, a relationship between the Glagolitic Ⱁ ON /ɔ/ and the CBR } OPEN O /o/u/ is highly probable. The small circles at the ends of the curving line of the Glagolitic glyph Ⱁ on the *Fig. 3.7.1-1* are *outward* (unlike the currently used glyph shape: Ⱁ). These small circles are located exactly in the position of the two short vertical lines of CBR } OPEN O /o/u/.

Moreover, in the early version of the Glagolitic script, the /u/ sound had no individual grapheme, like the Rovash scripts, and the Glagolitic Ⱁ ON /o/ denoted /u/ as well.[307]

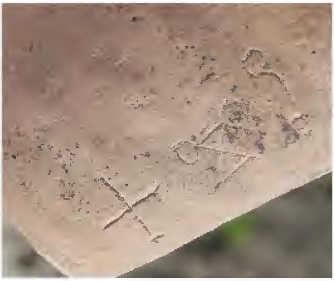

Fig. 3.7.1-1: Glagolitic Relic of Zalavár (Mosaburg) discovered by B.M. Szőke.[308]

Table 3.7.1-1 shows the influence of the Carpathian Basin Rovash on the Glagolitic alphabet. This theory is in accordance with the historical fact that the Carpathian Basin Rovash was extensively used in the territory of the late Avar Khaganate at the time when the Glagolitic script was presumably invented.

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[304] Rocca 1591, pp. 160-161

[305] Rumi, Tamás 2012: *Personal communication*

[306] Magyar 2009

[307] Vékony 2004a, pp. 28–29

[308] Magyar 2009

The Aethicus' Alphabet preserved some Carpathian Basin Rovash glyphs, which survived in the Glagolitic script. An example for the similarities is the Aethicus' glyph for ꟼ CIRCLE ENDED I /i/: ᕋ and the Glagolitic Ⰹ IZHE /i/j/. In addition, the Glagolitic Ⱈ KHER /x/ indicates a relation to Aethicus' glyph variant ђᵒ of the CBR ⅄ SHARP CH. This relation supports the assumption that the Carpathian Basin Rovash grapheme ђᵒ, ⅄ SHARP CH was the origin of the Glagolitic Ⱈ HER /x/. Consequently, the relationship between the Glagolitic script and Szekely-Hungarian Rovash could be based on the assumption that both scripts are cognates of the Carpathian Basin Rovash.

The Glagolitic script extensively uses ligatures.[309] This property could be inherited from the Carpathian Basin Rovash, which also used ligatures. In addition, several Glagolitic graphemes were created via ligating, e.g. Ⱆ UK /u/, Ⱉ OT /ɔ/, Ⱋ SHTA /tʲ/ʃt/, ⰟⰉ YERY /ɨ/, Ⱔ YENSЬ /jɛ̃/, Ⱘ ONSЬ /ɔ̃/, Ⱙ YONSЬ /jɔ̃/.

3.7.2. Influence on SHR

From 863, the Glagolitic alphabet was used in the Duchy of Mosaburg (*Map 3.6.1-2*) in the Carolingian Empire during the age of Chezil (*App. B*) and in the territories occupied by Swentopluk of Moravia. However, the Hungarian-speaking regions continued using SHR (e.g., Bodrog Relic, around 900, see *Fig. 9.2.2-1*). In this mixed cultural environment, SHR was influenced by the Glagolitic alphabet. The borrowed Glagolitic grapheme in *Table 3.7.2-1* was only used locally for a certain period (surviving in one SHR relic) and later went out of practice.

Glagolitic grapheme	Szekely-Hungarian Rovash grapheme	Last occurrence in relic
Ⱁ ON /ɔ/	ɿ CIRCLE ENDED O /o/	12th century

Table 3.7.2-1: The Glagolitic-originated Szekely-Hungarian Rovash grapheme.

The SHR ɿ CIRCLE ENDED O /o/ found in the Vargyas Inscription is a descendant of the Glagolitic Ⱁ ON /ɔ/ (*Fig. 9.2.3-1b*). However, the SHR Ↄ O /o/ is a direct descendant of the CBR } OPEN O /o/ (*Table 3.6.2-6*) based on their topological similarities. Moreover, the SHR Ↄ O /o/ had already existed in the 9th–10th centuries, much before the time of the Vargyas Relic (12th-13th centuries, see *Fig. 9.2.2-1*). Consequently, the evolution of ɿ CIRCLE ENDED O /o/ was independent from the SHR Ↄ O /o/.

It is noteworthy that the SHR ɿ CIRCLE ENDED O /o/ (*Sect. 3.7.2*), which was adapted from the Glagolitic script, kept the early shape of the Glagolitic Ⱁ ON /ɔ/. See the glyph in the *Fig. 3.7.1-1* for evidence. Since the SHR ɿ CIRCLE ENDED O /o/ shows this early stage of the Glagolitic Ⱁ ON /ɔ/, this fact may indicate the date of the adaptation of the Glagolitic ON into SHR.

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[309] McDaniel 2004, p. 33

4. Rovash Atlas: Genealogy of all rovash graphemes

This chapter presents the proposed genealogy of all rovash graphemes. The background of their genealogy was discussed in detail in *Ch. 3*. Although several attempts have been made to describe the relationships between the scripts,[310] the Rovash Atlas is the first comprehensive description of the genealogy of all rovash graphemes. The symbol * before graphemes, data or script-names in the Rovash Atlas indicates unattested data. Generally, the creation time of the earliest relic of each rovash glyph is denoted. However, the date of their creation or adoption can be earlier. If the denoted time is estimated, it is also marked with an *.

In the Rovash Atlas, the most typical—in several cases normalized—glyphs were used. However, other important glyph variants were also listed if they significantly differ from each other. In some cases, *unidentified intermediary scripts* were assumed if the usage periods of the ancestor and the descendant scripts did not overlap.

4.1. Genealogy of the Phoenician originated rovash graphemes

***Phoenician* 𐤀 ALF /ʔ/**
> *Greek (800 BC – present)* Α ALPHA /a/aː/
  > *Lycian (500 BC – 330 BC)* 𐊀 A /a/
> *Early Aramaic* 𐡀 ALEPH /ʔ/
  > *Proto-Rovash* *𐲊 /*e/
    > *Carpathian Basin Rovash* *𐲊 /*e/
      > *Szekely-Hungarian Rovash (12th c.)* 𐲊, ⧖ CLOSED E /e/eː/ > *(16th c.)* 𐲊
        > *Szekely-Hungarian Rovash (13th-15th c.)* ⧖, ⧗, 𐲊 H /h/ > *(21st c.)* ⧖, 𐲊
        > *Szekely-Hungarian Rovash (16th c.)* 𐲝 OE /ɛ/e/eː/ø/øː/
          > *SHR (16th c.)* Χ, ᛕ OE /ø/øː/ > *(20th c.)* OE /ø/
            > *Szekely-Hungarian Rovash (17th c.)* 𐲟 OEE /ø/øː/
              > *Szekely-Hungarian Rovash (20th c.)* 𐲞 OEE /ø/øː/
              > *Szekely-Hungarian Rovash (20th c.)* 𐲟 OEE /øː/
          > *Szekely-Hungarian Rovash (17th c.)* Ӿ OE /ø/øː/
              > *Szekely-Hungarian Rovash (18th c.)* ⁜ OE /ø/øː/
    > *Steppean Rovash (8th c.)* 𐲊 CLOSED E /e/
    > *Early Steppean Rovash* *𐲊 /*e/
      > *Old Turkic (Yenisei, Talas)* 𐰁 E /e/
  > *Proto-Rovash (8th-10th c.)* Y FORKED A /a/e/
    > *Carpathian Basin Rovash (7th c.)* Y, Y FORKED A /a/ɛ/
    > *Steppean Rovash (8th c.)* Y FORKED A /a/ɛ/
      > *Steppean Rovash (8th c.)* ᛖ ANGLED E /ɛ/
  > *Proto-Rovash (8th-10th c.)* ᛚ FORKED E /a/ɛ/e/
    > *Carpathian Basin Rovash (7th c.)* ᛚ FORKED E /a/ɛ/e/
      > *SHR (*8th c., 9th–10th c. in a ligature)* 𐲁 AA /ɒ/a/aː/ɛ/e/eː/ > *(20th c.)* 𐲁, 𐲁 AA /aː/
        > *SHR (17th c.)* 𐲀 A /ɒ/a/aː/ > *(20th c.)* 𐲀 A /ɒ/a/

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[310] Hitch 2010, p. 2

> *Proto-Rovash* *ʔ /*a/*aː/*ɛ/
> > *Steppean Rovash (8th c.)* ʔ ARCHED E /a/aː/ɛ/
> > *Proto-Rovash* *ʔ /*ø/*y/
> > > *Carpathian Basin Rovash (7th – 11th c.)* ʔ, ⋺ ARCHED UE /y/
> > > > *Glagolitic (9th c.)* Ⱏ JER /ĭ/, Ⱐ JERJ /ŭ/
> > > *Steppean Rovash (8th – 9th c.)* ʔ, ʖ ARCHED UE /ø/y/
> > *Proto-Rovash (8th c.)* ∋ DIAGONAL E /ɛ/
> > > *Carpathian Basin Rovash (8th c.) (Aethicus)* ♉, *∋ DIAGONAL E /a/ɛ/
> > > > *Szekely-Hungarian Rovash (14th c.)* 𐲉 E /ɛ/, *(16th c.)* 𐲉 E /e/
> > > > > *SHR (15th c.)* 𐲉 E /ɛ/e/eː/ > *(18th c.)* 𐲉 E /ɛ/
> > > > > > *SHR (14th c.)* 𐲬 CLOSED OE-UE /e/*ø/*øː/y/yː/
> > > > > > > *SHR (17th c.)* 𐲬, 𐲝 CLOSED OE-UE /ø/y/
> > > > > *SHR (17th c.)* 𐲉 E /ɛ/eː/
> > > > > *SHR (17th c.)* 𐲋 EE /eː/
> > > > > > *SHR (18th c.)* ‾ EE /eː/
> > > > *Glagolitic (9th c.)* Ⰵ JEST /ɛ/ > Ⱔ YENSЬ /jɛ̃/
> > > *Steppean Rovash (9th-10th c.)* ʒ TRIPLE E /ɛ/e/
> > > > *Steppean Rovash (9th c.)* ʒ TRIPLE E /ɛ/e/
> *Imperial Aramaic* 𐡀, 𐡀 ALEPH /ʔ/aː/eː/
> > *Parthian* 𐭀 𐭀 ALEPH /a/aː/
> > *Syriac (Nestorian after 489 AD)* ܐ ALAPH /ʔ/
> > > *Sogdian* 𐼰 ALAPH /ʔ/
> > > > *Old Turkic (Orkhon)* 𐰀 A /a/ɛ/

Phoenician 𐤁 BET /**b**/**v**/

> *Early Aramaic* 𐡁 BETH /b/
> > *Imperial Aramaic* 𐡁 BETH /b/v/
> > > *Parthian* 𐭁 BETH /b/w/
> > > > *Early Steppean Rovash* *ↄ /*b/*w/
> > > > > *Steppean Rovash (8th c.)* ↄ ARCHED B /b/β/
> > > > > *Old Turkic (Yenisei, Orkhon)* 𐰉 B¹ /b/

Phoenician 𐤂 GAML /**g**/

> *Early Aramaic* 𐡂 GIMEL /g/
> > *Imperial Aramaic* 𐡂, 𐡂 GIMEL /g/ɣ/
> > > *Early Steppean Rovash* *⅄ /*g/
> > > > *Proto-Rovash* *ᛟ /*g/
> > > > > *Carpathian Basin Rovash (8th c.)* ᛊ, *ᛟ FORKED G /g/
> > > > > > *Szekely-Hungarian Rovash (*8th c., 13th–14th c.)* 𐲍 G /g/d͡ʒʲ/
> > > > > > > Szekely-*Hungarian Rovash (12th–15th c.)* 𐲍 G /d͡ʒʲ/ɟ/
> > > > > > *Carpathian Basin Rovash (8th c.)* ⟋ SIMPLE G /g/
> > > > > > > *Szekely-Hungarian Rovash (*9th c.)* 𐲎 GY /*g/ >*(15th c.)* /d͡ʒʲ/ɟ/
> > > > > > > > *SHR* 𐲎 GY /g/ > *(15th c., in. lig.)* /d͡ʒʲ/ɟ/ > *(17. sz.)* ǂ > *(21. sz.)* ǂ
> > > > > > > > > *SHR (15th c.)* ǂ NGY /ng/
> > > > > > > *Glagolitic (9th c.)* Ⰳ, Ⰳ GLAGOLI /g/
> > > > > *Steppean Rovash (9th-10th c.)* ᛟ FORKED G /g/
> > > > *Old Turkic* 𐰏 G² /g/

> *Palmyrene* 𐡢 GIMEL /g/ɣ/
> *Syriac (Nestorian after 489 AD)* ܓ GIMEL /g/ɣ/
> *Sogdian* 𐼲 GIMEL /g/ɣ/
> *Parthian* 𐭂 GIMEL /g/ɣ/

***Phoenician* 𐤃 DELT /d/**
> *Early Aramaic* 𐤃 DALETH /d/
> *Imperial Aramaic* 𐡃, 𐡃, 𐡃, 𐡃 DALETH /d/ð/
> *Nabataean* 𐢄, 𐢄, 𐢄 DALETH /d/ð/
> *Parthian (early, found in Nisa, 1st c. BC)* 𐭃, 𐭃 DALETH /d/ð/
> *Early Steppean Rovash (8th-9th c.)* 〉 SHARP D /ð/
> *Proto-Rovash (8th-9th c.)* 〉 SHARP D /d/ð/d͡ʒ/
> *Carpathian Basin Rovash (6th-7th c.)* 〉 SHARP D /d/
> *Carpathian Basin Rovash (8th c.)* \⊦ SHARP GY /dɣ/
> *Steppean Rovash (8th c.)* 〉 SHARP D /ð/
> *Proto-Rovash* *𐲦 /*d/
> *Carpathian Basin Rovash (8th c.) (Aethicus)* ϰ,*𐲦 T /d/
> *Szekely-Hungarian Rovash (12th c.)* 𐲦 T /t/d/ > *(16th c.)* /t/
> *Szekely-Hungarian Rovash (14th c.)* ᚾ, + D /d/
> *Szekely-Hungarian Rovash (15th c.)* 𐲈 AND /nd/ > *(20th c.)* /ɒnd/
> *Szekely-Hungarian Rovash (20th c.)* ᚼ *earlier glyph of* DZ /d͡z/
> *Szekely-Hungarian Rovash (20th c.)* ǂ *earlier glyph of* DZS /d͡ʒ/
> *Szekely-Hungarian Rovash (20th c.)* ¥ DZS /d͡ʒ/
> *Szekely-Hungarian Rovash (21st c.)* ᛒ DZ /d͡z/
> *Szekely-Hungarian Rovash (14th c.)* 𐲧 ENT /nt/ > *(20th c.)* /ɛnt/
> *Szekely-Hungarian Rovash (17th c.)* 𐲧 ENT /nt/ > *(20th c.)* /ɛnt/
> *Szekely-Hungarian Rovash (17th c.)* 𐲱 ANT /nt/ > *(20th c.)* /ɒnt/
> *Parthian* 𐭃 DALETH /d/ð/
> *Middle Persian* 𐭣 DALETH /d/j/
> *Sogdian (early, from 4th c. BC)* 𐼘 DALETH /d/ð/

***Phoenician* 𐤄 HE /h/**
> *Early Aramaic* 𐤄 HE /h/
>*Proto-Rovash* *𐲩 /*h/*x/
> *Carpathian Basin Rovash (in a ligature: 6th-7th c., 8th–11th c.)* 𐲩 SHARP CH /x/
> *Carpathian Basin Rovash (8th c.)* ᚺo SHARP CH /x/
> *Glagolitic (9th c.)* Ⱈ KHER /x/
> *CBR (8th–11th c.)* 𐲩 SHARP H /*x/
> *Steppean Rovash (8th c.)* 𐲩 SHARP CH /h/
>*Imperial Aramaic (6th c. BC)* 𐡄, *(4th c. BC)* 𐡄 HE /h/
> *Early Steppean Rovash* *𐡄 /*x/ *(supposition is due to historical reasons)*
> *Steppean Rovash (9th c.)* 〉, ⴖ FORKED CH /x/
> *Hebrew* ה HE /h/
> *Parthian* 𐭄 HE /h/
> *Armenian (405 AD)* Խ XE /x/

***Phoenician* 𐤅 WAU /w/**

> *Early Greek* Ϝ *VAU /w/

  > *Euboean Greek* Ϝ DIGAMMA /w/

    > *Old Italic (including Etruscan)* 𐌅 VE /f/v/

  > *Lydian (7th c. BC–4th c. BC)* 𐤥 V /v/

    > *Proto-Rovash (8th-9th c.)* 𐲮 OPEN V /β/b-/

      > *CBR (6th–7th c.)* 𐲮, ˥ OPEN V /β/v/

        > *Szekely-Hungarian Rovash (9th–10th c.)* 𐲮 OPEN V /β/

      > *Steppean Rovash (8th c.)* 𐲮 OPEN V /β/b-/

> *Early Aramaic* 𐡅 WAW /w/

  > *Imperial Aramaic* 𐡅 WAW /w/oː/uː/

    > *Early Steppean Rovash* *𐡅 /*o/*u/

      > *Proto-Rovash (9th-10th c.)* Ꭹ FORKED O /o/u/

        > *Carpathian Basin Rovash (8th, distorted copy)* ᴕ, *(8th c.)* ⌇ OPEN O /o/u/

        > *SHR (*8th c., 9th–10th c.)* 𐲛 O /o/u/ > *(14th–15th c.)* /o/oː/ > *(20th c.)* /o/

          > *SHR (16th c.)* 𐲜 OO /o/oː/

          > *SHR (17th c.)* 𐲜 OO /o/oː/ > *(21st c.)* 𐲜 OO /oː/

        > *Glagolitic (9th c.)* Ⱁ ON /ɔ/

          > *Glagolitic (9th c.)* Ⱉ OT /ɔ/

          > *Glagolitic* Ⱆ UK /u/ (*duplication of* Ⱁ ON /ɔ/)

          > *Glagolitic (9th c.)* Ⱘ AS (Onsь) /ɔ̃/ (*ligature with* Ⰵ ES (Ensь) /ɛ̃/)

            > *Early Cyrillic (9th–10th c.)* Ѫ YUS (Onsь) /ɔ̃/

            > *CBR (10th–11th c.)* ᛟ TRIPLE O /ɔ̃/

          > *Szekely-Hungarian Rovash (12th c.)* ƪ CIRCLE ENDED O /o/

        > *Steppean Rovash (9th c.)* Ꭹ FORKED O /o/u/

        > *Proto-Rovash (8th-10th c.)* ⌇ FORKED O /o/u/

          > *Steppean Rovash (10th c.)* Ꭹ FORKED O /o/u/

      > *Old Turkic* 𐰆 O /o/u/

    > *Parthian* 𐭅 WAW /w/oː/uː/

  > *Kharoṣṭhī* 𐨬 VA /va/

***Phoenician* 𐤆 ZAI /z/**
> *Early Aramaic* 𐤆 ZAYIN /z/
> *Imperial Aramaic* 𐡆 ZAYIN /z/
> *Early Steppean Rovash (10th c.)* | SZ /s/
> *Proto-Rovash (9th-10th c.)* | SZ /s/, *also* /*r/ *in Ogur due to Rhotacism*
> *Carpathian Basin Rovash (7th c.)* | SZ /r/s/ > *(8th c.)* /s/
> *SHR (*8th c., 12th–13th c.)* | SZ /r/s/ (*gradually restricted to* /s/)
> *Szekely-Hungarian Rovash (14th c.)* ⟋ SIMPLE R /r/
> *Glagolitic* Ⱄ SLOVO /s/
> *Steppean Rovash (8th c.)* | SZ /s/
> *Old Turkic (Orkhon)* | S² /s/
> *Parthian* 𐭆 ZAYIN /z/
> *Syriac (Estrangela from around 200 AD)* ܙ ZAIN /z/
> *Sogdian* 𐼉, 𐼵 ZHAIN
> *Kharoṣṭhī* 𐨗, 𐨗 ZA /za/
> *Early Steppean Rovash (8th–9th c.)* T, *ϒ FORKED SZ /s/
> *Proto-Rovash (8th-9th c.)* Ť FORKED SZ /s/
> *Steppean Rovash (8th–9th c.)* Ť FORKED SZ /s/
> *Old Turkic (Talas)* ϒ, ϒ S¹ /s/

***Phoenician* 𐤇 HET /ħ/**
> *Early Aramaic* 𐤇 HETH /ħ/
> *Imperial Aramaic* 𐡇 HETH /ħ/
> *Proto-Rovash* *Ϻ /*ø/*y/
> *Carpathian Basin Rovash* *Ϻ /*y/
> *Szekely-Hungarian Rovash (12th c.)* Ϻ V /u/uː/y/v/ > *(15th c.)* /v/
> *SHR (14th–15th c.)* ⋈ U /u/uː/y/ > *(20th c.)* /u/
> *SHR (16th c.)* ⋈ UU /u/uː/ > *(20th c.)* /uː/
> *SHR (17th c.)* ⧗ UU /u/uː/
> *Szekely-Hungarian Rovash (15th c.)* Ϻ V /v/
> *SHR (20th c.)* Ϻ W /v/w/
> *SHR (20th c.)* Ϻ W /v/w/
> *SHR (21st c.)* Ϻ W /v/w/
> *Steppean Rovash (9th–10th c.)* Ϻ SHARP UE /ø/*y/
> *Hebrew* ח HET /ħ/x/
> *Nabataean* 𐢆, 𐢆, 𐢆 HETH /ħ/
> *Proto-Rovash (8th c.)* ЛƖ ANGLED CH /x/
> *Parthian* 𐭇 HETH /ɣ/x/h/
> *Early Steppean Rovash (8th-9th c.)* Ҥ, *N GH /ɣ/
> *Proto-Rovash (8th-9th c.)* И, *N GH /ɣ/g/, *in Alan:* /g/
> *Carpathian Basin Rovash (6th-7th c.)* N, И, Ҥ GH /ɣ/
> *Szekely-Hungarian Rovash (12th c.)* Ҥ, *Ꮒ GH /ɣ/
> *SHR (14th c.)* ⩾ OPEN OE /ø/øː/y/yː/
> *SHR (14th-15th c.)* Ꮒ OPEN UE /øː/y/yː/
> *SHR (17th c.)* ϟ OPEN UEE /y/yː/
> *(21st c.)* ϟ OPEN UEE /yː/
> *SHR (21st c.)* Ꮒ OPEN UE /y/
> *SHR (18th c.)* ⋝ OPEN OE /ø/øː/

> *Steppean Rovash (8th c.)* N, ᛇ, Ӊ GH /ɣ/
> *Early Steppean Rovash (8th–9th c.)* Ꞑ ANGLED UE /y/
> *Old Turkic (Orkhon)* 𐰇 Ö /ø/y/w/
> *Middle Persian* ᔓ HET /h/x/
> *Proto-Rovash (8th-10th c.)* ∩ ARCHED CH /x/

Phoenician 𐤈 TET /tˁ/

> *Early Greek* ⊕, ⊗ THETA /tʰ/[311]
>*Carian (7th c. BC–4th c. BC)* Ӽ NG /*unknown sound value*/
> *Proto-Rovash (10th c.)* Ӽ OPEN T /t/
> *Carpathian Basin Rovash (7th c.)* Ӽ OPEN T /t/
> *Steppean Rovash (8th c.)* Ӽ OPEN T /t/
> *Steppean Rovash (9th c.)* ϒ OPEN T /t/
>*Euboean Greek (8th–5th c. BC)* ⊗ THETA /tʰ/
>*Greek* Θ THETA /θ/ (*capital letter*)
> *Szekely-Hungarian Rovash (9th–10th c.)* ⊙ F /f/
> *Szekely-Hungarian Rovash (16th c.)* ⊗ F /f/
> *Szekely-Hungarian Rovash (16th c.)* ⊙ F /f/
> *Szekely-Hungarian Rovash (18tth c.)* ⊕ F /f/
>*Greek* θ THETA /θ/ (*minuscule letter*)
> *Szekely-Hungarian Rovash (*9th c., 12th c.)* Ø DIAGONAL F /f/
> *Glagolitic* Ⱚ FITA /θ/f/
> *Early Cyrillic* Ѳ FITA /f/t/θ/
> *Early Aramaic* 𐡈 TETH /tˁ/
> *Proto-Rovash (9th c.)* ⵅ CENTRAL T /t/
> *Steppean Rovash (9th–10th c.)* ⵅ CENTRAL T /t/
> *Proto-Rovash (8th–10th c.)* Ӿ SHARP T /z/
> *Carpathian Basin Rovash (6th–7th c., Környe)* Ⴤ, *(8th c., Aethicus)* ȶ, *Ӿ SHARP T /t/
> *Szekely-Hungarian Rovash (16th c.)* Ӿ SHARP TY /c/
> *Szekely-Hungarian Rovash (15th c.)* Ẍ TRIPLE TY /c/
> *Szekely-Hungarian Rovash (16th c.)* Ẋ FORKED TY /c/
> *Steppean Rovash (9th–10th c.)* ϰ SHARP T /z/
> *Early Steppean Rovash (8th–9th c.)* ϯ SHARP T /t/
> *Old Turkic (Orkhon, Yenisei)* 𐰔 Z /z/
> *Imperial Aramaic* 6, Ʊ TETH /tˁ/
> *Early Steppean Rovash (5th c.)* б ARCHED T /t/
> *Steppean Rovash (9th c.)* ∂ ARCHED T /t/
> *Old Turkic* 𐱃, 𐱄 T¹ /t/
> *Nabataean* ᏺ,ᔕ TETH /tˁ/
> *Palmyrene* ƅ TETH /tˁ/
> *Parthian (early, found in Nisa, 1st c. BC)* ʚ TETH /tˁ/
> *Proto-Rovash (11th–13th c.)* Ꝋ CLOSED T /t/
> *Carpathian Basin Rovash (8th c.)* Ꝋ CLOSED T /t/
> *Glagolitic (9th c.)* Ⱅ TVRDO /t/
> *Parthian* 𐭈, 𐭈 TETH /tˁ/
> *Early Steppean Rovash* *𐭈 /*t/*d/

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[311] Sihler 1995, p. 20

> *Old Turkic (Orkhon)* 𐰓 *(Yenisei)* 𐰔, 𐰓 D^{1} /d/

> *Old Turkic* 𐱃 T^{1} /t/

> *Syriac (Estrangela from around 200 AD)* ܛ TETH /tˤ/

> *Kharoṣṭhī* 𐨠[312] THA /tʰa/

> *Old Turkic (Orkhon, Yenisei)* 𐰑, 𐰒 D^{2} /d/

***Phoenician* 𐤉 YOD /j/** > *Early Aramaic* 𐡉 YODH /j/

> *Imperial Aramaic* 𐡉 YODH /j/iː/eː/

> *Early Steppean Rovash (5th c.)* Γ ANGLED I /i/e/

> *Proto-Rovash (8th-9th c.)* Γ, ᒣ ANGLED I /i/ï/e/

> *Carpathian Basin Rovash (8th c.)* ᒣ, *Γ ANGLED I /i/

> *Szekely-Hungarian Rovash (12th c.)* ᒣ J /i/j/ > *(18th c.)* /j/

> *Szekely-Hungarian Rovash (12th–13th c.)* Ί II /i/j/ > *(20th c.)* Ί II /iː/

> *Szekely-Hungarian Rovash (14th c.)* † I /i/

> *Szekely-Hungarian Rovash (17th c.)* Ί Y /i/j/

> *Szekely-Hungarian Rovash (20th c.)* ᒣ, † Y /i/j/

> *Glagolitic (9th c.)* Ⰻ I /i/j/

> *Steppean Rovash (8th c.)* ᒣ, Γ ANGLED I /i/e/

> *Old Turkic (Orkhon)* 𐰃 I /i/ï/e/

> *Middle Persian* 𐭩 YODH /j/iː/

> *Proto-Rovash (8th-9th c.)* Ͻ ARCHED I /i/

> *CBR (7th c. in a ligature, 8th c.)* Ͻ ARCHED I /i/ï/i/

> *Steppean Rovash (8th c.)* Ͻ, ꜿ ARCHED I /i/ï/

> *Early Steppean Rovash (5th c.)* D, *0 CLOSED J /j/

> *Proto-Rovash (10th c.)* D, *0 CLOSED J /j/

> *Carpathian Basin Rovash (8th c.)* D CLOSED J /j/i̯/ʎ/

> *Carpathian Basin Rovash (8th c.)* Ø LY /j/ʎ/

> *SHR (*8th c., 15th c.)* ʘ, ʘ, ʘ, ʘ LY /ʎ/ > *(16th c.)* /j/ʎ/

> *Glagolitic (9th c.)* Ⱓ JU /ju/

> *Steppean Rovash (8th c.)* D, *(9th–10th c.)* 0 CLOSED J /j/

> *Old Turkic (Orkhon)* 𐰖, *(Yenisei)* 𐰗 Y^{1} /j/ (*harmonized with back vowels*)

> *Book Pahlavi* 𐮉, 𐮉 YODH /j/iː/

> *Proto-Rovash (9th-10th c.)* ᑫ CIRCLE ENDED I /i/ (*turned 90°*)

> *CBR (8th c., Aethicus)* ᑫ, *ᑫ CIRCLE ENDED I /i/

> *Glagolitic (9th c.)* Ⰹ, Ⰺ IZHE /i/j/

> *Early Steppean Rovash (8th-9th c.)* *ᐱ CIRCLE ENDED I /i/

> *Steppean Rovash (8th c.)* *ᑫ CIRCLE ENDED I /i/ï/

> *Early Steppean Rovash* *𐰘 /*j/

> *Old Turkic* 𐰘 Y^{2} /j/

> *Parthian* 𐭉 YODH /j/iː/eː/

***Phoenician* 𐤊 KAF /k/**

> *Early Aramaic* 𐡊 KAPH /k/x/

> *Imperial Aramaic* 𐡊, 𐡊 KAPH /k/x/

> *Early Steppean Rovash* *ᐳ /*k/

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[312] Dani 1963, pp. 258–259, Dani suggested to derive Kharoṣṭhī THA from the Aramaic TETH.

> *Steppean Rovash (9th c.)* ᐳ FORKED K /k/
> *Old Turkic (Orkhon)* 𐰚, 𐰚 K² /k/ *(harmonized with front vowels)*
> *Old Turkic (Yenisei)* 𐰛 K² /k/ *(harmonized with front vowels)*
> *Parthian* 𐭊 KAPH /k/g/
> *Syriac* ܟ KAPH
> *Kharoṣṭhī* 𐨐 KA /ka/
> *Proto-Rovash* *𐲔 /*k/ *(supposition is due to geohistorical reasons)*
> *Carpathian Basin Rovash (8th c.)* 𐲔, *(Aethicus)* 𐲔 OPEN K /k/
> *Szekely-Hungarian Rovash (15th c.)* 𐲔 OPEN K /k/ɒk/aːk/
> *SHR (15th c.)* 𐲕 UNK /nk/ > *(20th c.)* /unk/
> *Glagolitic* Ⰽ, Ⰽ KAKO /k/

Phoenician 𐤋 LAMD /l/

> *Early Aramaic* 𐡋 LAMEDH /l/
> *Imperial Aramaic* 𐡋 LAMEDH /l/
> *Hebrew* ל LAMED /l/
> *Nabataean* 𐢐, 𐢏 LAMADH /l/
> *Steppean Rovash (9th-10th c.)* 𐲖 ARCHED L /l/
> *Parthian* 𐭋, 𐭋 LAMEDH /l/
> *Middle Persian* 𐭫 LAMEDH /l/
> *Book Pahlavi* 𐮋 LAMEDH /l/
> *Proto-Rovash (10th c.)* 𐲖 SIMPLE L /l/
> *Carpathian Basin Rovash (6th-7th c.)* 𐲖 SIMPLE L /l/
> *Glagolitic* Ⰾ LJUDIE /l/ʎ/
> *Steppean Rovash (8th c.)* 𐲖 SIMPLE L /l/
> *Syriac (Estrangela, Serta after 489 AD)* ܠ LAMADH /l/
> *Old Turkic:* 𐰞 L¹ /l/ (*harmonized with back vowels*)
> *Sogdian* 𐼹 LAMADH /l/d/
> *Kharoṣṭhī* 𐨫 LA /la/
> *Early Steppean Rovash (10th c.)* ⅄ CROSSED L /l/
> *Proto-Rovash* *ꭗ /*l/
> *Carpathian Basin Rovash (8th c.)* ꭗ, (*distorted*) ꭗ FORKED L /l/
>*Szekely-Hungarian Rovash (14th c.)* 𐲖, 𐲖, 𐲖, 𐲖 L /l/
> *Early Steppean Rovash (8th – 9th c.)* ↑ SHARP L /l/
> *Old Turkic* 𐰠 L² /l/ (*harmonized with front vowels*)
> *Early Steppean Rovash* *𐰡 /*lt/ *(duplicating the vertical line of the* 𐰠 SHARP L*)*
> *Steppean Rovash (9th c.)* 𐰡 LT /lt/
> *Old Turkic* 𐰡 LD /ld/

According to Róna-Tas, the Old Turkic 𐰞 L¹ /l/ did not originate in the Sogdian 𐼹 LAMADH that was used as /d/ in the earliest Sogdian documents.[313]

Phoenician 𐤌 MEM /m/

> *Early Greek* Μ M /m/
> *Lydian (7th c. BC–4th c. BC)* 𐤪 M /m/
> *Proto-Rovash (8th-9th c.)* 𐲘, *𐲘 OPEN M /m/ *(turned -90° or 90°)*

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[313] Róna-Tas 1991a, p. 57

> *Early Steppean Rovash (5th c.)* }, { OPEN M /m/
> *Carpathian Basin Rovash (8th c.)* }, *{ OPEN M /m/
>*Szekely-Hungarian Rovash (12th c.)* 𐲘 M /m/
>*Szekely-Hungarian Rovash (14th c.)* 𐲘 M /m/
> *Steppean Rovash (8th c.)* }, *(9th c.)* { OPEN M /m/
> *Early Aramaic* 𐤌 MEM /m/
> *Imperial Aramaic* 𐡌, 𐡌 MEM /m/
> *Parthian* 𐭌 MEM /m/
> *Middle Persian* 𐭬, 𐭬 MEM /m/
> *Early Steppean Rovash* *𐰢 /*m/
> *Old Turkic (Orkhon)* 𐰢 M /m/
>*Old Turkic (Yenisei)* 𐰢 M /m/
> *Old Turkic (Talas)* ᗒ M /m/
>*Old Turkic (Orkhon)* ꟸ M /m/
> *Kharoṣṭhī* 𐨨 MA /ma/
> *Early Steppean Rovash* *O /*m/
> *Proto-Rovash (8th-10th c.)* O ROUND M /m/
> *Old Turkic (Talas)* O M^T /m/

***Phoenician* 𐤍 NUN /n/**
> *Early Greek* Ͷ N /n/
> *Lydian (7th c. BC–4th c. BC)* 𐤸 N /n/
> *Early Aramaic* 𐡍 NUN /n/
> *Proto-Rovash (8th-9th c.)* ᛋ, Ә FORKED N /n/
> *Carpathian Basin Rovash (8th c.)* ᑦ SHARP N /n/
>*Glagolitic (9th c.)* Ⱀ, Ⱀ, Ⱀ, Ⱀ NASH /n/
> *Steppean Rovash (8th–9th c.)* ᛋ FORKED N /n/
> *Imperial Aramaic* 𐡍, 𐡍 NUN /n/
> *Early Steppean Rovash (5th c.)* 𐲙 N /n/
>*Proto-Rovash (11th-13th c.)* 𐲙 N /n/
> *Carpathian Basin Rovash (6th-7th c.)* 𐲙 N /n/ɲ/
> *SHR (9th–10th c.)* 𐲙 N /n/*ɲ/ > *(15th-17th c.)* /n/
> *SHR (15th c.)* 𐲚 NJ /nj/ɲ/, D NY /ɲ/
> *Steppean Rovash (8th c.)* 𐲙 N /n/
>*Old Turkic (Orkhon)* 𐰣 N¹ /n/ (*harmonized with back vowels*)
>*Early Steppean Rovash* *ʏ /*ŋ/
> *Proto-Rovash* *Y /*ŋ/
> *Carpathian Basin Rovash (7th c.)* Y NG /ŋ/
> *Steppean Rovash (8th – 10th c.)* Y NG /ŋ/
> *Old Turkic* 𐰭 Ṅ /ŋ/
> *Kharoṣṭhī* 𐨙 NYA /ɲ/
> *Early Steppean Rovash* *𐰤, *ᒣ /*n/
>*Steppean Rovash (9th c.)* ᒣ ANGLED N /n/
>*Old Turkic* 𐰤 N² /n/ (*harmonized with front vowels*)
>*Old Turkic* 𐰥, ᒣ N² /n/ (*harmonized with front vowels*)

***Phoenician* 𐤎, 𐤎 SEMK /s/**

> *Proto-Rovash* *𐲯 /*z/
  > *Carpathian Basin Rovash (8th c.)* 𐲯, 𐲯, 𐲯 OPEN Z /z/
    > *Carpathian Basin Rovash (8th c.)* 𐲯, 𐲯 OPEN Z /z/ > *(8th c.)* 𐲯
      >*Szekely-Hungarian Rovash (14th c.)* 𐲯, 𐲯 Z /z/
      >*Glagolitic* Ⰸ ZEMLJA /z/
> *Early Aramaic* 𐤎 SEMKATH /sˤ/
  > *Imperial Aramaic* 𐡎, 𐡎 SAMEKH /s/
    > *Early Steppean Rovash (8th-9th c.)* □ CLOSED R /r/*s/ (/r/ *is due to Rhotacism in Ogur*)
      >*Proto-Rovash (9th-10th c.)* □ CLOSED R /r/
        > *Carpathian Basin Rovash (8th c.)* □ CLOSED R /r/
        > *Steppean Rovash (8th c.)* □ CLOSED R /r/
      >*Old Turkic (Orkhon, Yenisei)* □ Š¹ /ʃ/ (*not consequently harmonized with back vowels*)
    > *Mandaic* ࡎ SAMEK /ʃ/
    > *Nabataean* 𐢕 SIMKATH /s/ (cf. *Mandaic* ࡎ SAMEK /ʃ/)
      >*Proto-Rovash (8th–10th c.)* ᑫ CIRCLE ENDED SH /ʃ/
        > *Carpathian Basin Rovash* *ᘉ /*ʃ/
          >*Szekely-Hungarian Rovash (14th–15th c.)* Λ S /ʃ/
            > *Szekely-Hungarian Rovash (13th–14th)* Λ S /ʃ/
          >*Glagolitic* Ⱌ CI /t͡s/

***Phoenician* 𐤏 EYN /ʕ/**

> *Early Aramaic* 𐤏 Ē /ʕ/
  > *Imperial Aramaic* 𐡏 AYIN /ʕ/
    > *Parthian (inscriptional)* 𐭏 AYIN /ʕ/
    > *Middle Persian* 𐭥 AYIN /ʕ/

***Phoenician* 𐤐 PE /p/f/**

> *Early Aramaic* 𐤐 PE /p/f/
  > *Proto-Rovash (9th-10th c.)* 𐲠 SIMPLE P /p/
    > *Carpathian Basin Rovash (7th c.)* 𐲠 SIMPLE P /p/
      > *Glagolitic (9th c.)* Ⱂ POKOJ /p/
    > *Steppean Rovash (8th c.)* 𐲠 SIMPLE P /p/
    > *Early Steppean Rovash (8th-9th c.)* 𐲠 SIMPLE P /p/
      > *Old Turkic (Orkhon)* 𐰯 EP /p/
  > *Imperial Aramaic (5th c. BC)* 𐡐, *(1st c. BC – 1st c. AD)* 𐡐 PE /p/f/[314]
    > *Proto-Rovash* *𐲠 /*p/
      >*Carpathian Basin Rovash (8th c., Aethicus)* 𐲠, *(8th c.)* 𐲠 FORKED P /f/p/
        > *Szekely-Hungarian Rovash (14th c.)* 𐲠 P /p/
          > *Szekely-Hungarian Rovash (16th c.)* 𐲠 P /p/
          > *Szekely-Hungarian Rovash (17th c.)* 𐲠 P /p/
          > *Szekely-Hungarian Rovash (17th c.)* 𐳻 NAP /nop/ > *(13th–14th c.)* /nɒp/
            > *SHR (15th c.)* 𐳻 TPRUS /*nop/*nɒp/ > *(21st c.)* /eːv/

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[314] Faulmann 1880, p. 94

- > *SHR (16th c.)* TPRU /*nɒp/ > *(21st c.)* /hoːnɒp/
  - > *SHR (17th c.)* NB /nb/mb/ > *(20th c.)* /nb/
    - > *SHR (16th c.)* AMB /mb/ > *(20th c.)* /ɒmb/
  - > *SHR (17th c.)* TPRU /*nɒp/
- > *SHR (15th c.)* 𐲡 EMP /mp/ > *(20th c.)* /emp/
  - > *SHR (16th c.)* MB /mb/

>*Steppean Rovash (8th c.)* FORKED P /p/
> *Nabataean* 𐢓, 𐢔 PE /p/
> *Palmyrene* 𐡯 PE /p/
> *Parthian* 𐭐 PE /p/
> *Kharoṣṭhī* 𐨤 PA /p/
> (*Supposed unidentified intermediary script/s*)
>*Old Turkic (Orkhon)* 𐰯 OP /op/up/

Phoenician 𐤑 SADE /sˤ/

> *Late Phoenician* (Ipsambul, 590 BC) 𐤑, 𐤑, 𐤑 SADE /sˤ/
- >*Proto-Rovash* *𐲆, *(9th-10th c.)* 𐲆 CS /t͡ʃ/*s/
  - > *CBR (8th c., Aethicus)* ᄀ, *𐲆 CS /*t͡ʃ/
    - > *Szekely-Hungarian Rovash (14th c.)* 𐲆 CS /t͡ʃ/
      - > *Szekely-Hungarian Rovash (16th c.)* ☐ CS /t͡ʃ/
      - > *Szekely-Hungarian Rovash (15th c.)* NCS /nt͡ʃ/
      - > *Glagolitic (9th c.)* Ⱍ CHRV /t͡ʃ/
  - > *Steppean Rovash (9th c.)* 𐲆 CS /t͡ʃ/s/

> *Early Aramaic* 𐡑 SADHE /sˤ/
- > *Imperial Aramaic* 𐡑 SADHE /sˤ/
  - >*Palmyrene* 𐡰[315] SADHE /sˤ/
  - >*Parthian* 𐭑 SADHE /t͡ʃ/
- > *Kharoṣṭhī* 𐨕 CA[316]
  - >*Kharoṣṭhī* 𐨖, 𐨖 CHA[317]
    - > (*Supposed unidentified intermediary script/s*)
      - > *Old Turkic (Orkhon)* 𐱁 ESH /s/ʃ/
        - > *Old Turkic (Yenisei)* 𐱂 ESH /s/ʃ/
  - >*Kharoṣṭhī* 𐨯 SA
    - > (*Supposed unidentified intermediary script/s*)
      - > *Old Turkic* 𐰨, 𐰨 ENC /nt͡ʃ/

Phoenician 𐤒 QOF /q/

> *Early Greek* Ϙ KOPPA /k/
- > *Lycian (500 BC – 330 BC)* ◇ K /k/kʲ/
  - > *Proto-Rovash (10th c.)* ◊ CLOSED Q/q/
    - >*Carpathian Basin Rovash* *◊ /*k/ *or* /*q/
      - > *Szekely-Hungarian Rovash (*8th c., 9th–10th c.)* ◊ K /k/
        - > *Szekely-Hungarian Rovash (17th c.)* ◊◊ Q /k/
        - > *Szekely-Hungarian Rovash (20th c.)* ◊ Q /k/

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[315] Powell 1991: Table of Phoenician and Greek Letterforms
[316] Glass 2000, p. 14; Glass suggested to derive Kharoṣṭhī CA from the Aramaic SADHE.
[317] Glass 2000, p. 14; Glass suggested to derive Kharoṣṭhī CHA from the CA.

> *Szekely-Hungarian Rovash (20th c.)* ⌂ Q /k/
> *Szekely-Hungarian Rovash (17th c.)* Ѧ X /ks/
> *Szekely-Hungarian Rovash (20th c.)* ⟠ X /ks/
> *Szekely-Hungarian Rovash (21st c.)* ᚦ X /ks/
>*Steppean Rovash (8th–9th c.)* Ø, ◊ CLOSED Q /q/
> *Early Aramaic* Ϙ QOPH /q/
> *Imperial Aramaic* Ƥ, Ᵽ, Ƥ QOPH /q/
> (*Supposed unidentified intermediary script/s*)
> *Old Turkic (Orkhon)* ◁ IK /ïq/qï/q/, *(Yenisei)* ▷ IK /ïq/qï/q/
> *Parthian* ŋ, ƞ QOPH /q/
> *Early Steppean Rovash* *ᛔ, *ᛒ /*q/ *(turned 90° then closed its shape)*
> *Proto-Rovash (10th c.)* ᛒ ARCHED K /k/
> *Carpathian Basin Rovash (8th–11th c.)* ᛒ ARCHED K /k/
> *CBR (11th c.)* Ѧ SHARP K /k/
> *Szekely-Hungarian Rovash (13th c.)* Ѧ SHARP K /k/
> *Old Turkic (Orkhon)* ᛔ, ᛒ OEK /øk/yk/kø/ky/k/
> *Old Turkic (Orkhon)* ᚺ AQ /q/
> *Steppean Rovash (8th c.)* ᑕ OPEN Q /q/
> *Middle Persian* ᘔ QOPH /q/
> *Early Steppean Rovash (8th-9th c.)* ᘐ CLOSED G /g/x/
> *Steppean Rovash (8th c.)* ᘐ CLOSED G /g/
> *Syriac (Nestorian, after 489 AD)* ܩ QOPH /q/
> *Late Phoenician (590 BC)* ᛉ QOF /q/
> *Proto-Rovash* *8 /*q/
> *Carpathian Basin Rovash (8th c., Aethicus)* ⟟, *(8th-11th c.)* 8 ARCHED Q /q/
> *Steppean Rovash (8th c.)* 8 ARCHED Q /q/
> *Proto-Rovash* *⧗ /*q/
> *Early Steppean Rovash (10th c.)* ⧗ ANGLED Q /q/
> *Carpathian Basin Rovash* *⧗ /*x/
> *Szekely-Hungarian Rovash (15th c.)* Ӿ CH /x/
> *Steppean Rovash (8th c.)* ⧗ ANGLED Q /*q/uq/

Phoenician ᑫ **ROSH /r/**

> *Early Aramaic* ᓄ RESH /r/
> *Imperial Aramaic* ɥ RESH /r/
> *Early Steppean Rovash* *ɥ /*r/
> *Proto-Rovash (8th-9th c.)* h SHARP R /r/
> *Proto-Rovash (8th-10th c.)* H R /r/
>*Carpathian Basin Rovash* *h /*r/
> *Szekely-Hungarian Rovash (15th c.)* H R /r/
> *Szekely-Hungarian Rovash (17th c.)* И R /r/
> *Glagolitic (9th c.)* ь RCI /r/
> *Steppean Rovash (9th c.)* ƀ SHARP R /r/
> *Old Turkic (Orkhon)* ч AR /r/
> *Middle Persian* ᒿ RESH /w/r/
>*Proto-Rovash (8th-10th c.)* Ω ARCHED R /r/
> *Steppean Rovash (8th c.)* ∩ ARCHED R /r/
> *Parthian* ɜ RESH /r/

***Phoenician* 𐤔 SHIN /ʃ/s/**

> *Late Phoenician* (590 BC) ᴪ SHIN /ʃ/
> *Early Aramaic* 𐡔, 𐡔 SHIN /ʃ/
> *Imperial Aramaic* 𐡔, 𐡔 SHIN /ʃ/ (cf. *Nabataean* 𐢞 SHEEN /ʃ/)
> *Early Steppean Rovash* *ᛧ /*ʃ/
>*Proto-Rovash (8th-10th c.)* 𐲰 ZS /ʃ/
> *Carpathian Basin Rovash* *𐲰 /*ʃ/
> *Szekely-Hungarian Rovash (15th c.)* 𐲰 ZS /ʃ/ > *(14th–15th c.)* /ʒ/
> *Szekely-Hungarian Rovash (17th c.)* Ѱ SCH /ʒ/ʃ/
> *Steppean Rovash (8th c.)* 𐲰 ZS /ʃ/
> *Proto-Rovash (11th–13th c.)* ᛉ SHL /ɬ/
>*Old Turkic (Orkhon, Yenisei)* 𐰲 IC /it͡ʃ/t͡ʃi/t͡ʃ/ (*not consequently harmonized with front vowels*)
> *Nabataean* 𐢞, 𐢞 SHEEN /ʃ/
> *Kharoṣṭhī* 𐨮 SSA /ʂa/
> *Proto-Rovash* *Φ /*ʃ/
> *Carpathian Basin Rovash (10th–11th c.)* Φ CLOSED S /ʃ/
> *Carpathian Basin Rovash (8th c.)* Φ, *(Aethicus)* ℭ CLOSED S /ʃ/
> *Glagolitic (9th c.)* Ⰶ ZHIVETE /ʒ/
> *Szekely-Hungarian Rovash (15th c.)* 𐲲 US /ʃ/ > *(20th c.)* /uʃ/
> *Kharoṣṭhī* 𐨭 SHA /ʃa/
> *Early Steppean Rovash* *ɧ /*ʃ/
> *Steppean Rovash (9th c.)* ɧ ARCHED SH /ʃ/
> *Old Turkic (Talas and Yenisei)* ^ ASH /ʃ/
> *Early Cursive Pahlavi* 𐭱 SHIN /ʃ/

According to Rawlinson, the *Phoenician* 𐤔 SHIN represented both /ʃ/ and /s/.[318]

***Phoenician* 𐤕 TAU /t/θ/**

> *Early Greek* T TAU /t/
> *Greek* Τ TAU /t/
> *Lydian (7th c. BC–4th c. BC)* ↑ C */sound value is undetermined/*
> *Proto-Rovash* *↑ */sound value is undetermined/*
> *Carpathian Basin Rovash* *↑ */sound value is undetermined/*
> *Szekely-Hungarian Rovash (14th c.)* ↑ C /t͡s/
> *Szekely-Hungarian Rovash (15th c.)* ↕ ENC /nt͡s/ > *(20th c.)* /ɛnt͡s/
> *Old Italic (including Etruscan)* 𐌕 TE /t/
> *Latin* T T /t/
> *Runic* ᛏ TIWAZ /t/
> *Early Aramaic* 𐡕 TAW /t/θ/
> *Imperial Aramaic* 𐡕, 𐡕 TAW /t/θ/
> *Early Steppean Rovash (10th c.)* λ, *ɦ FORKED T /t/
> *Steppean Rovash (9th c.)* λ FORKED T /*t/
> *Old Turkic (Orkhon)* 𐱅 AET /t/ *(harmonized with front vowels)*
> *Parthian (early, found in Nisa, 1st c. BC)* 𐭕 TAW /t/d/

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[318] Rawlinson 1889

> *Parthian* 𐭕 TAW /t/d/
> *Proto-Rovash* (*8th-10th c.*) ∩ ARCHED D /d/di/
> *Carpathian Basin Rovash* *ɫ /*d/
> *Glagolitic* (*9th c.*) Ⰴ DOBRO /d/
> *Steppean Rovash* (*8th c.*) ∩ ARCHED D /d/ð/d͡ʒ/
> *Syriac* (*Estrangela*) ܬ TAW /t/θ/

According to Rawlinson, the *Phoenician* 𐤕 TAU represented both /t/ and /θ/.[319]

4.2. Genealogy of the Turkic originated rovash graphemes

***Turkic ideogram* *𐰊, *𐰉 /*b/*u̯/**
> *Early Steppean Rovash* *𐰉 /*b/*u̯/
>*Proto-Rovash* *ᛗ /*b/*u̯/
> *Carpathian Basin Rovash* (*8th–11th c.*) 𐰉 SHARP U /u̯/
>*Early Steppean Rovash* (*5th c.*) X B /b/
> *Proto-Rovash* (*9th c.*) X B /b/
> *Carpathian Basin Rovash* (*7th c.*) X B /b/
> *Szekely-Hungarian Rovash* (**8th c., 14th c.*) X B /b/
>*Old Turkic* 𐰉 AEB /b/u̯/
> *Proto-Rovash* (*9th-10th c.*) ᛘ RAISED B /b/
>*Steppean Rovash* (*9th c.*) ᛘ RAISED B /b/
> *Early Steppean Rovash* *≻ /*b/ (*turning with 90°*)
> *Proto-Rovash* (*8th-10th c.*) ≻ ANGLED B /b/
> *Steppean Rovash* (*9th c.*) ≻ ANGLED B /b/
> *Old Turkic* (*Yenisei*) 𐰊 AEB /b/u̯/

***Turkic ideogram* *𐰎, *𐰎, *𐰍, *ˈıˈ /*ɣ/**
> *Early Steppean Rovash* (*8th–9th c.*) ˈıˈ TRIPLE GH /ɣ/
> *Old Turkic* (*Orkhon*) 𐰍, (*Yenisei*) 𐰎, 𐰍, ˈıˈ AG /ɣ/ (*harmonized with back vowels*)

***Early Greek* (*9th c. BC*) 𐌘 PHEI /pʰ/**
> *Etruscan* (*7th–3rd c. BC*) 𐌘 PHE /pʰ/
> *Greek* Φ PHI /f/pʰ/
> *Proto-Rovash* (*8th–10th c. AD*) ϕ CENTRAL F /f/ (*in Alan inscription*)

4.3. Paleographic relations of the rovash numerals

The genealogy of the rovash numerals has uncertainties, since in several cases the numerals in the surviving relics are not specific for any certain script (*Table 4.3-1*). The glyphs of the Phoenician and Aramaic 𐡜 #20 glyph are based on Lidzbarski.[320] The Roman numeral ↆ #50 was used before the 1st century BC.[321]

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[319] Rawlinson 1889

Script	ONE	TWO	THREE	FOUR	FIVE	LARGER NUMERALS
Phoenician, Aramaic	/	//	///	////	/////	– #10, 𐡜 #20
Roman	I	II	III	IV	V	X #10, *(before 1st c. BC)* ↆ #50
SHR	(19th c.) I	(18th c.) II	(19th c.) IIII	(19th c.) IIII	(19th c.) V	(19th c.) X #10, (19th c.) V #50, (19th c.) Ӿ #100
CBR	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	*(There is no occurrence in relics)*	(7th c.) V	(7th–8th c.) X #10

Table 4.3-1: The rovash numerals and their possible paleographical ties

4.4. Examples of the glyph-forming methods

During the evolution of the scripts, various glyph-forming methods (*Table 3.1-4*) were applied. The following tables present examples of their applications.

M$_1$: Slight modification
SHR 𐲞 CLOSED OE-UE /e/*ø/*øː/y/yː/ > *SHR* 𐲝, ⪤ CLOSED OE-UE /ø/y/

Table 4.4-1: Examples of slight modification of the glyphs

M$_2$: Line insertion or removal
Imperial Aramaic 𐡕 TAW /t/θ/ > *CBR* 𐲦 CLOSED T /t/
Kharoṣṭhī 𐨨 MA /ma/ > *Early Steppean Rovash* *O /*m/ > > *Proto-Rovash* O ROUND M /m/, *Old Turkic* O EM /m/[322]
SR Y FORKED A /a/ɛ/ > Ⴤ ANGLED E /ɛ/
CBR ʒ, ع OPEN M /m/+ *auxiliary vertical line* > *SHR* 𐲘 M /m/
CBR (Aethicus) ᛔ, ꟻ FORKED P /f-/p/ + *auxiliary slanting line* > *SHR* 𐲠 P /p/
CBR 𐲯 OPEN Z /z/ + *auxiliary vertical line* > *SHR* 𐲯, 𐲯 Z /z/

Table 4.4-2: Examples of the adding an auxiliary line or removing a line

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[320] Lidzbarski 1898: *TAF. XLVI.*

[321] Hornblower & Spawforth 2003, p. 1053; Ricci 1898, Plate IV

[322] Kononov 1980, pp. 58–59

M_3: Line extension, shortening or shifting
CBR Φ CLOSED S /ʃ/ > *CBR* ɸ CLOSED S /ʃ/
SHR 1, † J /ɯ/i/iː/j/ > *SHR* † I /i/iː/, 1 J /i/iː/j/
SHR 𐲠 P /p/ > *SHR* ǂ P /p/

Table 4.4-3: Examples of extending, shortening or shifting a line of the glyphs

M_4: Mirroring or rotating a glyph or a line
CBR | SZ /r/s/ > *SHR* ⟋ SIMPLE R /r/

Table 4.4-4: Examples of mirrored- or rotated-glyph-based development of the graphemes

M_5: Ligature formation
SHR 1 J /j/+ Ↄ N /n/ > Ð NJ /nj/ɲ/ > D NY /ɲ/
CBR N GH /ɣ/g/ + > SHARP D /d/ > ꝁ SHARP GY /dɣ/*d͡ʒʲ/
SHR ɬ D /d/+ ⊠ Z /z/ > ⧆ DZ /d͡z/
SHR ɬ D /d/+ Y ZS /ʒ/ > Ɏ DZS /d͡ʒ/
PR ∩ ARCHED D /d/di/ + 1 ANGLED I /i/> ⩀ DI /di/

Table 4.4-5: Examples of ligature formation

M_6: Duplication of the glyph
SHR ϟ OPEN K /k/ > ᛪ UNK /nk/
CBR ⟋ SIMPLE G /g/ > *SHR (15th c.)* ⫽ GY /g/d͡ʒʲ/ɟ/
SHR Ʒ E /ɛ/e/eː/ > Ꝏ CLOSED OE-UE /e/ø/øː/y/yː/

Table 4.4-6: Examples of glyph duplication

M_7: Line merger
Early Steppean Rovash *ᛟ /*b/*u̯/ > *Proto-Rovash (8th c.)* ϔ RAISED B /b/ (*merging the lower part of the glyph*)
SR X OPEN T /t/ > ϒ OPEN T /t/ (*merging the lower part of the glyph*)

Table 4.4-7: Examples of merging lines of the glyphs

M_8: Ornamenting
SHR X OE /ø/ > *SHR* ӿ OEE /ø/øː/
SHR Ω MB /mb/ > *SHR* Ѫ TPRU /*nɒp/

Table 4.4-8: Examples for ornamenting glyphs

M_0: No modification ***(during adoption)***
Imperial Aramaic 𐡆 ZAYIN /z/ > *CBR* ǀ SZ /s/

Table 4.4-9: Examples for no modification of the glyphs during their adoption between scripts; in some cases using an existing glyph for a new sound value

5. The Proto-Rovash

5.1. *Description of the script*

5.1.1. General properties

Proto-Rovash script is directed exclusively from right to left; there is no casing and no numerals in any of the known Proto-Rovash relics.

5.1.2. Proto-Rovash letters

Table 5.1.2-1 details the letter repertoire of the Proto-Rovash. The number of occurrences of each glyph in each relic is given in brackets at the end of the rows. In the first column, the glyphs of the normalized Proto-Rovash graphemes are listed.

Glyph	Name	IPA symbol	Examples of the Proto-Rovash glyph in relics
Y	FORKED A	/a/e/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan, *in a ligature*, *sound*: /a/ (4) Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, *sound:* /e/ (1)
X	B	/b/	Mayatskoe G. No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur (1)
⋟	ANGLED B	/b/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic (1) Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1) Bilyar, 11th–12th c., *Sec. 5.2.7*, in Ogur (1)
ϒ	RAISED B	/b/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)
₦	CS	/t͡ʃ/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (3)
∩	ARCHED D	/d/	Novocherkassk, *Sec. 5.2.3*, in Turkic, *sound:* /d/ (1) Stanitsa Krivyanskoe, in As–Alan, *sound:* /d/, *in lig.* (2)
>	SHARP D	/d/ð/d͡ʒ/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur, *sound:* /d͡ʒ/ (1) Novocherkassk, *Sec. 5.2.3*, in Turkic, *sound:* /ð/ (3) Stanitsa Krivyanskoe, *Sec. 5.2.4*, in As–Alan, *sound:* /ð/ (3) Mayatskoe G. No. 2, *Fig. 5.2.10-2*, in Ogur, *sound:* /ð/ (1) Bilyar, 11th–12th c., *Sec. 5.2.7*, in Ogur, *sound:* /d/ (1)
϶	DIAGONAL E	/ɛ/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur (1)
ʎ	FORKED E	/a/ɛ/e/	Novocherkassk, 8th-10th c., *Sec. 5.2.3*, in Turkic, *sound*: /a/ɛ/ (3)
ɸ	CENTRAL F	/f/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1)

Glyph	Name	IPA symbol	Examples of the Proto-Rovash glyph in relics
N	GH	/ɣ/, *in As-Alan languages:* /g/	Mayaki, 8th-9th c., *Sec. 5.2.1*, in Ogur, *mirrored, calligr., sound:* /ɣ/ (1) Stanitsa K., *Sec. 5.2.4*, in As–Alan, *mirrored, glyph:* ᛋ, *sound:* /g/ (1) Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, *in ligature, sound:* /ɣ/ (1)
⎍	ANGLED CH	/x/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur (1)
∩	ARCHED CH	/x/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1)
1	ANGLED I	/i/i/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur, *sound:* /i/ (1) Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, *sound:* /i/ (1)
ↄ	ARCHED I	/i/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (2) Mayatskoe G. No. 2, *Fig. 5.2.10-2*, in Ogur, *mirrored* (1)
D	CLOSED J	/j/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)
ß	ARCHED K	/k/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)
⟩	SIMPLE L	/l/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, *in lig.* (1)
ɜ	OPEN M	/m/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur (1) Mayatskoe G. No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur (1)
O	ROUND M	/m/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic (2)
Ↄ	N	/n/	Bilyar, 11th–12th c., *Sec. 5.2.7*, in Ogur (1)
ϟ	FORKED N	/n/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur, *glyph:* ϑ (4) Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic (1) Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan, *partly in lig.* (4)
ƴ	FORKED O	/o/u/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic, *glyph:* ƴ (1) Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (5) Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan, *in. lig.* (1)
◊	CLOSED Q	/q/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)
H	R	/r/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic, *in lig.* (2) Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (2)
Ω	ARCHED R	/r/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1)
h	SHARP R	/r/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur (2) Mayatskoe G. No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur (1)
ᐱ	CIRCLE ENDED SH	/ʃ/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1)
Y	ZS	/ʃ/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic (3)
Ɏ	SHL	/ɬ/	Bilyar, 11th–12th c., *Sec. 5.2.7*, in Ogur (1)
ϒ	FORKED SZ	/s/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1) Mayatskoe G. No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur (1)
⧗	CENTRAL T	/t/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1) Mayatskoe G. No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur (1)
ð	CLOSED T	/t/	Bilyar, 11th–12th c., *Sec. 5.2.7*, in Ogur (1)
ϰ	OPEN T	/t/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, *in lig.* (1)

Glyph	Name	IPA symbol	Examples of the Proto-Rovash glyph in relics
X	SHARP T	/*t/z/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (1), *sound:* /z/
⁊	OPEN V	/β/, *in Common Turkic at the beginning of the word:* /b-/, *in As–Alan:* /v/	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur (1) Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic (1) Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan (2)

Table 5.1.2-1: Proto-Rovash graphemes and examples of each glyph in relics

In Proto-Rovash relics the ⁊ OPEN V denoted /β/b-/v/. In current Turkic languages, /β/ also exists. For instance, in the Latin-based Turkish orthography, the grapheme *v* represents /β/ in some cases.[323]

5.1.3. Diacritical mark and punctuation

There is only one known Proto-Rovash diacritical mark (*Table 5.1.3-1*); its role is signifying the end of the word. Punctuation marks also exist in Proto-Rovash (*Table 5.1.3-2*).

Glyph	Name of the PR grapheme	Examples of the glyph in relics
˙	COMBINING DOT ABOVE	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)

Table 5.1.3-1: The diacritical mark of PR

Glyph	Name of the PR grapheme	Examples of the glyph in relics
•	WORD SEPARATOR MIDDLE DOT	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic
:	COLON	Mayaki Amphora, 8th–9th c., *Sec. 5.2.1*, in Ogur
⁝	TRICOLON	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan
▤	ROVASH SEPARATOR LARGE	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic (1)

Table 5.1.3-2: The Proto-Rovash separators and examples of each glyph in relics

5.1.4. Absence of harmonization of consonants with vowels

Presumably, the Proto-Rovash consonants were not harmonized with the vowels of their syllables (*Table 5.1.4-1*). It is noteworthy that a general rule cannot be justified based on the very few number of relics. A consonant is called *velar* if it is used near back vowels, and it is called *palatal* if it is used near front vowels. The back (velar) and front (palatal) vowels are listed in *Table A-1*.

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[323] Gökser & Kerlake 2005, pp. 6–7

Harmonized with back vowels (called *velar consonants*)	Harmonized with front vowels (called *palatal consonants*)	Examples
h R /r/	h R /r/	Mayaki, 8th–9th c., *Sec. 5.2.1*, in Ogur
(*There is no occurrence in relics*)	h R /r/	Mayatskoe Gorodishche inscription No. 2, 9th c., *Fig. 5.2.10-2*, in Ogur

Table 5.1.4-1: Examples of the consonants being not harmonized with the vowels of their syllables

5.1.5. Ligatures

In Proto-Rovash, ligatures were frequently used. Generally, they are only stylistic. However, two ligatures are systematic and used regularly (*Table 5.1.5-1*): ᗰ DA and ᗩ DI. The sound value of ᗩ DI are /di/ and /ed/, see also *Sect. 8.1.5*. Surely, its constituents are ∩ ARCHED D /d/ and 1 ANGLED I. This supports that the 1 ANGLED I originally represented both /e/ and /i/, despite the fact that in the surviving rovash relics, the 1 ANGLED I represented /i/ only. It is noteworthy that the Old Turkic 𐰃 I also represented both /e/ and /i/ (*Sec. 4.1*). The Old Turkic is a descendant of Early Steppean Rovash, like Steppean Rovash; moreover, Early Steppean Rovash surely affected Proto-Rovash when different tribes migrated from Central-Asia to Eastern Europe. The survived Proto-Rovash relics shows the latest period of the Proto-Rovash; therefore, they shows the influence of Early Steppean Rovash.

Glyph	Name	Transcription	Constituents	Examples of the glyph in relics
ᗰ	DA	/da/	∩ ARCHED D /d/ + Y FORKED A /a/	Stanitsa Kriv., *Sec. 5.2.4*, in As–Alan, *sound:* /da/
ᗩ	DI	/ed/*di/	∩ ARCHED D /d/ + 1 ANGLED I /i/e/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic, /ed/

Table 5.1.5-1: The systematic Proto-Rovash ligatures

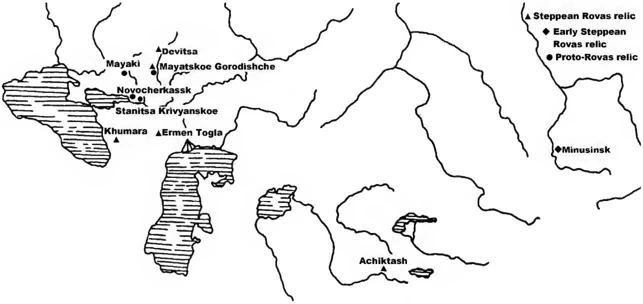
Table 5.1.5-2 presents the non-systematic Proto-Rovash ligatures applied on occasion.

Glyph	Name	Transcription	Constituents	Examples of the glyph in relics
ᛉ	AA	/ʃi/, /iʃ/, /aa/	ᛚ FORKED E /a/ + ᛚ FORKED E /a/	Stanitsa Krivyanskoe, *Sec. 5.2.4*, in As–Alan
ᛡ	ER	/ɛr/	ᛚ FORKED E /ɛ/ + H R/r/	Novocherkassk, 8th–10th c., *Sec. 5.2.3*, in Turkic
⋈	ATLIGH	/ᵃtlïɣ/	X OPEN T /t/ +) SIMPLE L /l/ + N GH /ɣ/	Alsószentmihályfalva, *Sec. 5.2.6*, in Turkic
ᛟ	NI	/ni/	ϟ FORKED N /n/ + ɔ ARCHED I /i/	Stanitsa Krivyanskoe, 8th–10th c., *Sec. 5.2.4*, in As–Alan, *ornamental*
ᛋ, ᛋ	NU	/nu/	ϟ FORKED N /n/ + ʕ, } FORKED O /u/	Stanitsa Krivyanskoe, *Sec. 5.2.4*, in As–Alan *See also Sec. 8.1.5.*

Table 5.1.5-2: The non-systematic Proto-Rovash ligatures found in the relics

5.2. Proto-Rovash relics

Map 5.2-1 presents the locations of the Proto-Rovash archaeological finds in Eurasia. It is noteworthy that in Mayatskoe Gorodishche both Proto-Rovash and Steppean Rovash inscriptions were found; therefore, these places are denoted duplicated symbols in *Map 5.2-1*.



Map 5.2-1: Locations of Proto-Rovash, Early Steppean Rovash, and Steppean Rovash archaeological finds in Eurasia excluding the relics of the Carpathian Basin.

5.2.1. Mayaki Amphora Inscription in Ogur

The Mayaki Amphora Inscription was found in the motte-and-bailey castle of Mayaki (other name: Mayaki in Donetsk Oblast, Ukraine), on the right bank of the Seversky Donets River. Its drawings were created by I. L. Kyzlasov (*Fig. 5.2.1-1* and *2*).[324] The amphora was made in the 8th–9th centuries, when the fortress was used.

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[324] Klyashtorny 1979; Кызласов 1994, p. 273

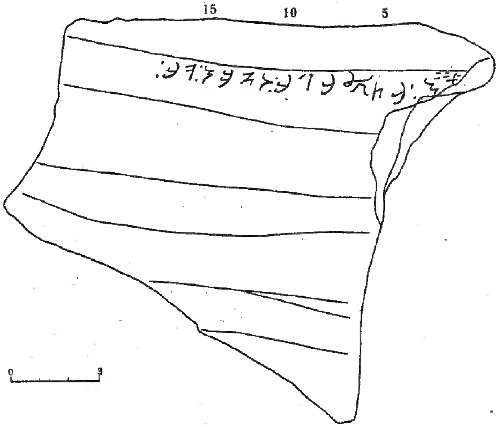

Figure 5.2.1-1: The Mayaki Amphora Inscription, 8th–9th centuries

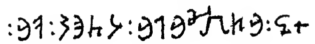

Figure 5.2.1-2: Another drawing of the Mayaki Amphora Inscription. On this relic, the glyph Һ—a variant of the Н R /r/ was used.

Written with Proto-Rovash font	:ЭꟻЗЭh>:Э1ЭИЛ hЭ:[…]
IPA phonetic transcription	/[…] ᵃnᵃr xᵃɣᵃnïn d͡ʒˈrem βᵒn/
Translation from Ogur	‘[This is] of Khagan Nar [*or* Anar]. Twenty *won.*’

Table 5.2.1-1: The transcription of the inscription on the Mayaki Amphora. Note the Mayaki variant Э of the ϟ FORKED N.

The Ogur word *won* was a measurement unit. The first two graphemes of the inscription were damaged; their transcription presumably is *bu*. The name *Nar* (or *Anar*) was an ancient Turkic personal name.[325] The transition /q/>/x/ had been completed by the beginning of the 10th century in Ogur,[326] hence the use of the word /xaɣan/ instead of the /qaɣan/ in the inscription.

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[325] Vékony 2004a, p. 272

[326] Róna-Tas 1982b, pp. 163–164

5.2.2. Novocherkassk Clay Flask Inscription in Turkic

A clay flask with two handles was found during the construction of Salsk-Tsaritsyn (currently Volgograd) railroad in 1909.[327] Kyzlasov called it Salsk-Tsaritsyn relic. There are similar flask finds from around Novocherkassk with typical dimensions: width of the flask is no larger than 8 cm; diameter of its circle-like side is about 30–35 cm. According to Artamonov, the origin of the clay flask on the *Fig. 5.2.3-1* is the 8th–10th centuries.[328] Under the right handle, on the convex side of the flask, there is a Proto-Rovash inscription. *Fig. 5.2.3-1* shows its photograph, and *Fig. 5.2.3-2* presents its drawing.

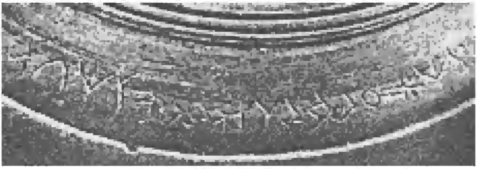


Figure 5.2.3-1: The Novocherkassk Inscription (8th–10th centuries)[329]

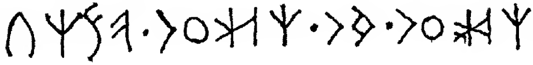


Figure 5.2.3-1: The drawing of the Novocherkassk Inscription.[330]

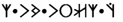
Written with normalized Proto-Rovash font	
IPA phonetic transcription	/a ˈʃɛ̲r̲mˈð bˈð ˈʃɛ̲r̲mˈð boʃᵃdˈn/
Translation from Common Turkic	‘Oh. Let us drink. We drink from [this] bosha.’

Table 5.2.3-1: Transcription of the Novocherkassk Inscription. The transcription by archaeologist–historian G. Vékony[331] was modified by Turkologist I. Vásáry in 2011.[332]

The word *bosha* was the name of a fermented alcoholic drink; *Sec. 7.2.9* presents the genealogy of the word. In this case, the ٦ OPEN V probably represented /b-/, since the inscription was written in Common Turkic, where in the beginning of the word /b-/ was pronounced instead of /β-/.[333] The word /-dïn/ is a Turkic ablative suffix, meaning ‘from’.

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[327] Artamonov 1954, p. 264

[328] Кызласов 1994, p. 248

[329] Baichorov 1989, *Table 113*

[330] Vékony 2004a, p. 243

[331] Vékony 2004a, pp. 243–252

[332] Vásáry, István 2010–2011: *Personal communication*

[333] Vásáry, István 2010–2011: *Personal communication*

5.2.3. Stanitsa Krivyanskoe Clay Flask Inscription in Pre-Ossetic (As–Alan)

In May 1942, a clay flask was discovered at a depth of 1.5 meters near Stanitsa Krivyanskoe (*Fig. 5.2.4-1*).[334] Its inscription was published by Artamonov in 1954, with the original punctuation by Turchaninov in 1964 and in 1971.[335] It is date to the 8th–10th centuries.[336] *Figure 5.2.4-2* shows Turchaninov's drawing.

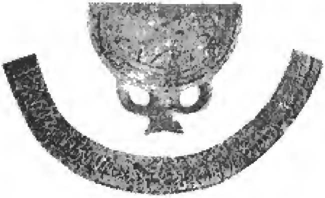

Figure 5.2.4-1: The photographs of the Stanitsa Krivyanskoe Inscription[337]

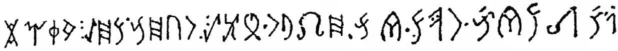

Figure 5.2.4-2: The drawing of the Stanitsa Krivyanskoe Inscription.[338] On this relic, the ligatures , of the FORKED N /n/ and the variants of the , FORKED O /o/u/ were used.

Written with normalized PR font	
IPA phonetic transcription	/voʃudanu ð^{a}βuː danu t͡ʃ^{a}rið ni^{u}z^{a}g ð^{a}xˈt͡ʃ^{a}n u^{a}t͡ʃ^{a}g b^{a}f^{i}sta-a/
Translation from As–Alan (Pre-Ossetic)	'[This] *voshu* drink is yours. [This] drink should keep alive [the] one who drinks [it]. For you, Uachag wrote this.'

Table 5.2.4-1: Transcription of the Stanitsa Krivyanskoe Inscription made by G. Vékony.[339] This transcription needs a linguistic review

In this relic, the form *voshu* of the drink *boza* occurs;[340] *Sec. 7.2.9* presented the genealogy of this word. The sound /a/ was a Pre-Ossetic common determiner, meaning 'this'. This /a/ is written in the duplication of FORKED E /a/ (/a-a/) at the end of the row, where the other /a/ is the last vowel of the word /b^{a}f^{i}sta/. In the inscription at the end of the word /ni^{u}z^{a}g/, there is the diacritical mark ◌̇ COMBINING DOT ABOVE, a specific Proto-Rovash word separator. The use of this separator in the inscription was probably occasionally mixed with the other Proto-Rovash separator, the ⁝ TRICOLON.

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[334] Artamonov 1954, p. 263–268

[335] Turchaninov 1964 & 1971

[336] Кызласов 1994, p. 248

[337] Baichorov 1989, *Table 116*

[338] Turchaninov 1964, pp. 83–84 & 1971, pp. 75–77

[339] Vékony 2004a, pp. 253 – 266

[340] Vékony 2004a, p. 257

5.2.4. Mayatskoe Gorodishche Inscription No. 2 in Ogur

In 1909, N. E. Makarenko found short rovash inscriptions in the Mayatskoe Gorodishche. They are dated to the period from the late 8th to the 9th centuries.[341] The drawings of the rovash inscriptions were published by G.F. Turchaninov as well (*Fig. 5.2.5-1*).[342] Vékony transcribed them. The The inscription No. 2 (according to the sequencing of Turchaninov) was identified as Ogur text by Vékony.[343] Based on the comparative analysis of the rovash graphemes, the author of this book concluded that it is written Proto-Rovash. Oppositely, the other smaller inscriptions of Mayatskoe Gorodishche published by Turchaninov are presumably written in Steppean Rovash; therefore, they are presented in *Sect. 8.2.6.*

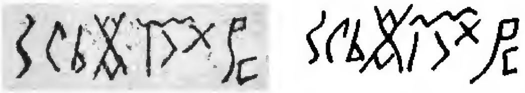

Figure 5.2.5-1: Drawing of Proto-Rovash Inscription No. 2 of Mayatskoe Gorodishche by Vékony[344] and by Turchaninov.[345]

Written with normalized Proto-Rovash font	ʒↄhẊΓ̃>X [*tamgha*]
IPA phonetic transcription	/[…] b^{ɛ}ð^{ı}s^{ɛ}trim/
Translation from Ogur	‘N. [member of a clan], I had it carved.’

Table 5.2.5-1: Transcription of Inscription No. 2 of Mayatskoe Gorodishche

According to Vékony, the first two symbols of the inscription make up a tamgha. Similarly complex tamgha symbols are known in other rovash inscriptions, e.g. the Needle Case of Jánoshida (*Sec. 7.2.3*).[346] The glyph of the Proto-Rovash ↄ ARCHED I /i/ is reversed in the inscription. It is noteworthy that mirroring glyphs is common in the rovash writing.

There is a Common Turkic verb /bɛðiz/ meaning ‘carve’. Ogur does not have the consonant /z/; hence it substituted /z/ with /s/. Therefore, the inscription is in the Ogur language and the word /bɛðis/ was a Common Turkic loanword. The word /bɛðisɛt/ is a causative form meaning *to have it carved.* The /bɛðisɛtrim/ means ‘I had it carved’. Since the tamgha means a clan-name, the meaning of the inscription is ‘N. [member of a clan], I had it carved’.

5.2.5. Stone Inscription of Alsószentmihályfalva

The inscription on a building stone was found in Alsószentmihályfalva (present-day Mihai Viteazul, Transylvania, Romania, see *Map 7.2-1*), photographed by E. Benkő (*Fig. 5.2.6-1*).[347]

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[341] Makarenko 1911, pp. 21–22, *Fig. 19–22*
[342] Turchaninov 1964, pp. 75–76
[343] Vékony 2004b
[344] Vékony 2004b
[345] Турчанинов 1990, p. 215
[346] Vásáry 1972, *Fig. 1*
[347] Benkő, E.,1972a, p. 453 & Appendix; 1972b

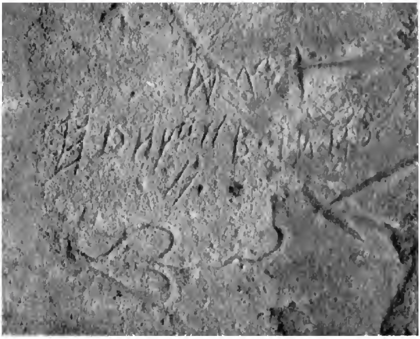

Figure 5.2.6-1: The Alsószentmihályfalva Inscription.

The stone was an ancient Roman building stone—proved by the leaf-symbol, a frequently applied ornamental element of ancient Roman inscriptions—reused later. Alsószentmihályfalva was located on the territory where the late Province Dacia existed up to the middle of the 3rd century. Dénes showed that the Khavars (Khazar rebels joined the Hungarians in the 9th century[348]) probably settled in this region (at that time Transylvania).[349] In some parts of Hungary, there is evidence of the Khavars even from the 13th century.[350] The drawings of the rovash inscription made by Vékony[351] and E. Benkő are presented in *Fig. 5.2.6-2* and *Fig. 5.2.6-3*.

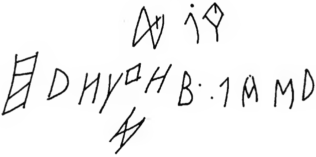

Figure 5.2.6-2: Drawing of the Alsószentmihályfalva Inscription made by Vékony.

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[348] Kristó & Makk 2001, p. 52

[349] Dénes 1984–1985, p. 573

[350] Györffy 1990, p. 50

[351] Moravcsik 1984, p. 85; Vékony 1987a, pp. 108–117; 1997, pp. 108–117; 2004a, pp. 217–230

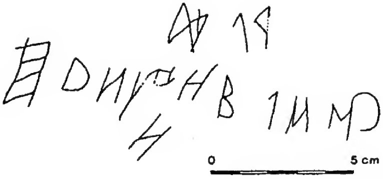

Figure 5.2.6-3: Drawing of the Alsószentmihályfalva Inscription made by E. Benkő.[352]

Table 5.2.6-1 presents a transcription of the inscription; however, this inscription has not widely been accepted.

Written with normalized Proto-Rovash font	*First row:* ᛞ i̇Y *Second row:* ▤ DHY◊ HB [...]
IPA phonetic transcription	*First row:* /ᵋbi ᵃtlˡɣ/ *Second row:* /[…] • kʸr qerᵉjⁱ/
Translation from Turkic	*First row:* ‘His mansion is famous.’ *Second row:* ‘[…], Kür Kerei.’

Table 5.2.6-1: Transcription of the Alsószentmihályfalva Inscription. It was deciphered by Vékony in 1987,[353] then it was modified by Vékony in 1997[354] and by Obrusánszky in 2012[355]. This transcription contains only the reliably readable parts of the inscription.

The word /ɛb/ was used for larger buildings in the rovash building inscriptions *(Sect. 8.2.5)*;[356] therefore, its meaning is ‘mansion’. The building inscriptions are typical in early Rovash relics. According to G. Vékony, the word /jyᵉdi/ meant *Jewish* in the Khazar language, and in this case it was probably used as a personal name. The /kʸr/ means ‘courageous’ and ‘fearless’ in Turkic;[357] such personal names are typical. Vékony claimed that the second row or at least the first two words (*Jüedi Kür*) formed the name of a Khavar leader. However, drawing of archaeologist E. Benkő does not support the transcription of the first word in the second row made by Vékony.

Moreover, according to Mongolist B. Obrusánszky, the probable meaning of the word DHY◊ is /qerᵉjⁱ/ ‘Kerei’, which was the name of an ancient Turkic tribe near the Altai Mountains. The *gür* (probably a version of *kür*) was a dignity name and it existed in the *Kerei* (in other name *Kereit*) and in the *Kara-Khitai* (*Kara-Khitan*) people. E.g. an enemy of Genghis Khan was the Kara-Khitai *Gür Khan* in *The Secret History of the Mongols*.[358] The symbol ▤ is a typical punctuation mark in Proto-Rovash, Early Steppean Rovash, and Steppean Rovash. The symbol in the third row was probably a tamgha, according to Vékony.

According to E. Benkő, the date of the Alsószentmihályfalva inscription is before the 17th century. The author of this book claims that the style of its graphemes is more archaic, and he realized that in the period of the 8th–11th centuries, all graphemes of the Alsószentmihályfalva inscription have parallelism in other rovash relics. However, the date of the inscription remained undetermined.

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[352] Benkő E. 1994a, pp. 157-168

[353] Vékony 1987a, pp. 108-117

[354] Vékony 1997a, p. 110

[355] Obrusánszky, Borbála 2012: *Personal communication*

[356] Vékony 1997a, p. 110

[357] DTS, p. 328

[358] Ligeti 1962: Sections 150 & 151

5.2.6. Pottery of Bilyar

In 1985, A.F. Kochkina published the inscription on the handle of a vessel (*Fig. 5.2.7-1*), estimating its origin in the 11th–12th centuries.[359] Kyzlasov also dated the relic to the 11th-12th centuries.[360] However, Khalikov dated it to the 12th–13th centuries.[361] The leftmost grapheme of the inscription is surely the rovash punctuation mark ⁚ *Colon*. A possible partial transcription is presented in *Table 5.2.7-1*. The reading /dʸʃ/ 'dream' was proposed by the author. Turkologist I. Vásáry improved it to /dʸɬ/ and gave another possible meaning: 'noon'.[362] He stated that the /dyɬ/ could be the Ogur version of the Common Turkic /dyʃ/ 'dream/noon'. The second part of the inscription is still unsolved. The fourth grapheme of the inscription from the right is probably the Ꝺ CLOSED T /t/; however, even □ CLOSED R /r/ might be suggested.

The language of the inscription is most probably Ogur, since Bilyar was in the middle of Volga Bulgaria. Volga Bulgaria existed between the 7th century and 1240s around the confluence of the Volga and Kama rivers, today its area is part of Tatarstan and Chuvashia in Russia. The sound value of the Proto-Rovash Ұ SHL /ɬ/ indicates the transitional sound between the Common Turkic /ʃ/ and Chuvash /l/. Presumably, the voiceless alveolar lateral fricative /ɬ/ was in use in Ogur.[363] The /ɬ/ exists even today in the Finno-Ugric Khanty language as well. Note that the dental version of this sound is denoted also with /ɬ/ in IPA. The dental version exists today in Celtic Welsh; it is Latinized as *ll*.[364] Moreover, the sound /ɬ/ exists in the Caucasian Avar as well.

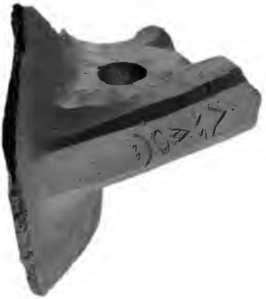

Figure 5.2.7-1: The Bilyar Inscription (11th–12th centuries)

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[359] Kochkina 1983; Kochkina 1985 pp. 54–80

[360] Кызласов 1994, p. 274

[361] Khalikov 1988

[362] Vásáry, István 2010–2011: *Personal communication*

[363] Vásáry, István 2010–2011: *Personal communication*

[364] Vásáry, István 2010–2011: *Personal communication*

Written with normalized Proto-Rovash font	: Ↄϑᐅ Ɏ>
IPA phonetic transcription	/dʸɨ [b…t…n]/
Translation from Ogur	‘dream/noon’ (*second part is undeciphered*)

Table 5.2.7-1: The partial transcription of the Bilyar Relic

6. The Early Steppean Rovash

6.1. *Description of the script*

6.1.1. General properties

Early Steppean Rovash script is directed exclusively from right to left; there is no casing and no numerals in any of the known Early Steppean Rovash relics. The Early Steppean Rovash applied vowel harmony in the case of some consonants.

6.1.2. Early Steppean Rovash letters

Table 6.1.2-1 details the letters of Early Steppean Rovash attested with relics. In *Table 6.1.2-1*, the number of occurrences of each glyph in each relic is given in brackets at the end of the rows. In the first column, the glyphs of the normalized Early Steppean Rovash graphemes are listed.

Glyph	Name	IPA symbol	Examples of the Early Steppean Rovash glyph in relics
X	B	/b/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian (1) Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (1)
>	SHARP D	/ð/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (1)
ϑ	CLOSED G	/g/x/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic, *sound:* /g/ (3) Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic, *sound:* /x/ (1)
Ԋ	GH	/ɣ/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (1)
∵	TRIPLE GH	/ɣ/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic, *overwritten* (2) Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (2)
Γ	ANGLED I	/i/e/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian (2)
ᔑ	CIRCLE ENDED I	/i/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (2)
D	CLOSED J	/j/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian (1) Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (2)
⅄	CROSSED L	/l/	Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (1)
ꞁ	SHARP L	/l/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (1)
ʒ	OPEN M	/m/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian, *mirrored:* Ɛ (1) Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (2)
ↄ	N	/n/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian (1) Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (2)
ᒉ	SIMPLE P	/p/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (2)
⧗	ANGLED Q	/q/	Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (1)
▯	CLOSED R	/r/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (3)

Glyph	Name	IPA symbol	Examples of the Early Steppean Rovash glyph in relics
ǀ	SZ	/s/	Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (2)
ϒ	FORKED SZ	/s/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (1)
6	ARCHED T	/t/	Hunnic Bronze Helmet, 5th c., *Sec. 6.2.1*, Mongolian (1)
λ	FORKED T	/t/	Homokmégy-Halom, 10th c., *Sec. 6.2.3*, in Turkic (1)
+	SHARP T	/t/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (1)
И	ANGLED UE	/y/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic (3)

Table 6.1.2-1: Early Steppean Rovash graphemes and examples of each glyph in relics

6.1.3. Punctuation

There exist punctuation marks in Early Steppean Rovash (*Table 6.1.3-1*).

Glyph	Name of the Early Steppean Rovash grapheme	Examples of the glyph in relics
•	WORD SEPARATOR MIDDLE DOT	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic
▤	ROVASH SEPARATOR LARGE	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic *with also a variant:* ⌇

Table 6.1.3-1: Early Steppean Rovash separators and examples of each glyph in relics

6.1.4. Harmonization of consonants with vowels

Early Steppean Rovash consonants are harmonized with the vowels of their syllables (*Table 6.1.4-1*). A consonant is called *velar* if it is used near back vowels, and it is called *palatal* if it is used near front vowels. The back (velar) and front (palatal) vowels are listed in *Table A-1*.

Harmonized with back vowels (called *velar consonants*)	Harmonized with front vowels (called *palatal consonants*)	Examples
Ӈ, N GH /ɣ/	ᘐ CLOSED G /g/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic
(*There is no occurrence in relics*)	▯ CLOSED R /r/	Minusinsk, 8th–9th c., *Sec. 6.2.2*, in Turkic

Table 6.1.4-1: Examples of the consonants being harmonized with the vowels of their syllables

6.2. *Early Steppean Rovash relics*

Map 8.2-1 presents the locations of the only one known Early Steppean Rovash archaeological find in Asia (in Minusinsk).

6.2.1. Hunnic Bronze Helmet of France

Fig. 6.2.1-1 presents the inscription of a bronze helmet found in France and it is supposed that it was the helmet of a Hunnic warrior.[365] It is noteworthy that there is no photo of this bronze helmet in the literature, it is known from the publication of Harmatta, only. Moreover, according to Csiky, similar helmet has not been found in Hunnic relic.[366]

Due to historical reasons, its inscription cannot be Steppean Rovash, only Early Steppean Rovash. See the transcription in *Table 6.2.1-1*. The glyph of Ϭ TETH /tˤ/ on the inscription probably reserved the presumably ancestor Imperial Aramaic glyph (ϭ, 𐡈) of the TETH /tˤ/ what was surely adapted into the Early Steppean Rovash. The inscription is written probably in Hunnic language. According to Obrusánszky, the Hunnic language could be relative to the Mongol.[367]

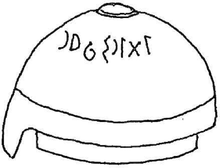

Figure 6.2.1-1: Inscription of the Hunnic Bronze Helmet found in France (5th century).

Written with normalized Early Steppean Rovash font	ↃDϬ ƸↃΓXΓ
IPA phonetic transcription	/iben$^{a/e}$m t^{e}j^{ˈ}n/
Translation from Mongolian	‘Get [the helmet to] protect you!’

Table 6.2.1-1: Transcription of the Hunnic Bronze Helmet of France. According to B. Obrusánszky and Uchiraltu the inscription cannot be interpreted in Turkic.[368]

Iranist J. Harmatta already gave a transcription of this inscription, he used the sound values of the Old Turkic graphemes, see *Table 6.2.1-2*.[369] It is noteworthy that the identification of the fifth symbol from right (Ƹ) as Old Turkic Ʒ ENC /n͡tʃ/ and of the sixth symbol (Ϭ) as Old Turkic δ AB /b/ is unsubstantiated. Moreover, according to Obrusánszky, in the 5th century, the inscription was probably not in Turkic.[370] Consequently, the relic is probably not written in Old Turkic; therefore, this relic can be handled as an Early Steppean Rovash inscription.

Written with normalized Old Turkic font	ↃDδ ƷↃ ΓXΓ
IPA phonetic transcription	/idi ˈn^{a}nt͡ʃ b^{a}j^{a}n/
Translation from Turkic	‘Owner: Ïnanč Bayan’

Table 6.2.1-1: Earlier transcription of the Hunnic Bronze Helmet of France according to Harmatta.

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[365] Harmatta 1997b, p. 171

[366] Csiky, Gergely 2013: *Personal communication*

[367] Obrusánszky, Borbála 2013: *Personal communication*

[368] Obrusánszky, Borbála 2013: *Personal communication*; Uchiraltu 2013: (PhD in Mongolian linguistics and literature) *Personal communication through Dr. Borbála Obrusánszky*

[369] Harmatta 1997b, p. 172

[370] Obrusánszky, Borbála 2013: *Personal communication*

It is noteworthy that the inscription on *Fig 6.2.1-1* shows the segmentations of the words according to Obrusánszky and not to Harmatta.

6.2.2. Spindle Disk of Minusinsk

In 1948, a rounded stone of a spindle was exposed during the archaeological excavations of V.P. Levasova near Minusinsk. The relic is from the 8th–9th centuries, currently preserved in the Minusinsk Museum.[371] There are Old Turkic symbols on the flat surfaces of the spindle disk, and there is an Early Steppean Rovash inscription on its arched lateral surface. *Fig. 6.2.2-1* presents the photograph of the spindle disk,[372] and *Fig. 6.2.2-2* shows the drawing and the transcription made by Vékony.[373] The transcription was improved by Vásáry and then Danka.[374]

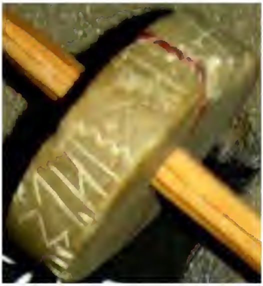

Figure 6.2.2-1: The photograph of the spindle disk of Minusinsk

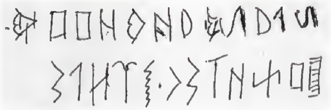

Figure 6.2.2-2: The copy of the inscription broken into two rows

On this relic, the glyph variant of the PR ᚿ CIRCLE ENDED I /i/, ᚼ of the PR X SHARP T /z/*t/, and the mirrored glyph H of the SR N GH /ɣ/ were used. The glyph ⁝,—a variant of the symbol ▤ ROVASH SEPARATOR LARGE, was also used on this relic.

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[371] Vasil'ev 1983, p. 40, No. E-87

[372] TÜRIK BITIG, website

[373] Vékony 2004b

[374] Vásáry, István 2010–2011: *Personal communication*; Danka, Balázs 2013: *Personal communication*

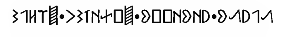
Written with normalized Early Steppean Rovash font	
IPA phonetic transcription	/ip-jig jygyrr^{y}g ^{ø}rtylm^{ɛ}ð s^{a}ɣ ^{a}p^{a}m/
Translation from Common Turkic	'(This) thread-spindle [is] fast. My healthy aunt does not hide.'

Table 6.2.2-1: Transcription of the Inscription of Minusinsk.

An interesting feature of this relic is that the fifth grapheme from the right and the last (leftmost) grapheme of the first row in *Fig. 6.2.2-2* are corrected: the writer earlier wrote 'ı' TRIPLE GH /ɣ/ in both cases, and then corrected them with ϑ CLOSED G /g/. In other words, the writer first used the fricative /ɣ/, and then corrected it to the plosive /g/. Earlier Vékony supposed that the HT is a personal name; however, Danka improved its translation based on Clauson.[375]

It is noteworthy that the word /apa/ has several meaning, including 'ancestor, grandfather, grandmother, father, mother, paternal uncle, paternal aunt, brother, sister, midwife';[376] in this context the 'aunt' is the most probable meaning, as it was originally proposed by Vékony.

6.2.3. Quiver Inscription of Homokmégy-Halom in Turkic

The Early Steppean Rovash inscription on a bone-plate covering a quiver was discovered by archaeologist I. Dienes (*Fig. 6.2.3-1*), and was researched by Vasil'ev among others.[377] The relic is from grave No. 6 of a cemetery dating to the period of the Magyars' Land Acquisition (10th century).[378] This cemetery is in Homokmégy-Halom (Hungary, see *Map 7.2-1*), one of the centers of the Magyars led by the Grand Prince Árpád. According to Dienes, this type of quiver was unknown in the Avar Age; therefore, it surely was the product of the Magyars, and the owner of the quiver was a member of the Magyar Army.[379] *Fig. 6.2.3-2* presents the drawing of its inscription.[380]

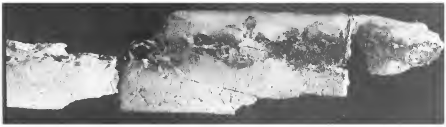


Figure 6.2.3-1: The bone-plate of the Quiver of Homokmégy-Halom (10th century)

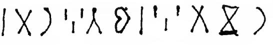


Figure 6.2.3-2: The drawing of the Inscription of Homokmégy-Halom[381]

According to Vékony, the */s^{a}ɣd^{a}ɣ/ 'quiver' is a loanword in Turkic; it originated from the Iranian /saːxtag/ 'garniture, equipment'.[382] The transcription in *Table 6.2.3-1* was made by G. Vékony and improved by I. Vásáry and then Danka.[383] According to the author, the Early Steppean Rovash ꝺ CLOSED G surely originated from the *Middle Persian* 𐭒 QOPH /q/. According to Vékony, the Iranian word /saːxtag/ was accepted by Turkic with the /x/>/q/ substitution in the middle of the word. That could be the reason why the Early Steppean Rovash ꝺ CLOSED G originated from the Middle Persian 𐭒 QOPH /q/ was applied; and probably, the ꝺ CLOSED G represented /q/ at that time. Later, according to Vékony, the /q/>/ɣ/ transition happened. Due to the conservativity of the writing, the ꝺ CLOSED G remained in this word, but it already represented /ɣ/.

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[375] ED 803; Danka, Balázs 2013: *Personal communication*

[376] ED 5, *apa* a.

[377] Vasil'ev 1983

[378] Dienes 1972. p. 67; Dienes 1992, p. 31

[379] Dienes 1992, p. 39

[380] Dienes 1992. p. 31–40.

[381] Vékony 1992a, p. 42

[382] ED, p. 806, *saːxt* a.

However, according to Danka, the /saːxtag/ could accepted by Turkic without change. Since the /ɣ/ is denoted by ˈıˈ TRIPLE GH in the inscription; therefore, it is very probably, that the ꝺ CLOSED G has different sound value. Consequently, its most probably sound value is /x/. however, in this case, the voicing /t/>/d/ is not necessary to suppose. Therefore, the sound value of λ is /t/ and not /d/.

Written with normalized Early Steppean Rovash font	IX Ɔˈıˈλꝺl ˈıˈX⧗Ɔ
IPA phonetic transcription	/^{o}n^{o}qlˈɣ s^{a}xt^{a}ɣˈn b^{a}s/
Translation from Turkic	‘Triumph with [a] quiver of ten arrows.’

Table 6.2.3-1: Transcription of the Inscription of Homokmégy-Halom

According to Vásáry, the language of the inscription could be either Common Turkic or Ogur.[384] This inscription proves that Turkic was used as well by the army of the Grand Prince Árpád. This supports the fact that the culture of the land-acquiring Magyars had a strong Turkic heritage. For instance, the mythological bird *turul* of the Árpád Dynasty originated from the Turkic *togril*, which was a bird name.[385] Also, between 948 and 950, the Magyar leader *Zombor* visited Byzantium, and he returned with the missionary bishop Hierotheos, whose title was ‘*Bishop of Turkia*’.[386]

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[383] Vékony 2004a, pp. 56–47; Vásáry, István 2010–2011: *Personal communication*; Danka, Balázs 2013: *Personal communication*

[384] Vásáry, István 2010–2011: *Personal communication*

[385] Vásáry 2003

[386] Tempfli 2000

7. The Carpathian Basin Rovash

7.1. Description of the script

7.1.1. General properties

Carpathian Basin Rovash was used in the Carpathian Basin (*Map 3.1-1*) between the 7th and 11th centuries.[387] The direction of writing in CBR is RTL. There is no casing in the known Carpathian Basin Rovash relics. The history of CBR was discussed in *Subch. 3.4*, and the known CBR inscriptions are presented and transcribed in *Subch. 7.2*.

7.1.2. Carpathian Basin Rovash letters

In the following, the Carpathian Basin Rovash grapheme repertoire is introduced in detail (*Table 7.1.2-1*). In *Table 7.1.2-1*, the first column presents the glyphs of the typical Carpathian Basin Rovash graphemes.

Glyph	Name	Historical use	Examples of the Carpathian Basin Rovash glyph in relics and in publications
Y	FORKED A	/a/ɛ/	Jánoshida, 670–700, *Fig. 7.2.3-1, sound:* /ɛ/, *glyph:* Y Kiskőrös–Vágóhíd, Chalice, 670–700, *Fig. 7.2.4-1a, in a lig.* Nagyszentmiklós, Jug No. 6, *Fig. 7.2.9-9, sound:* /a/
X	B	/b/	Jánoshida, Needle Case, 670–700, *Fig. 7.2.3-1* Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1*
*Ꮧ	CS	/*t͡ʃ/	Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, simplified:* ᒣ
>	SHARP D	/d/	Bow from Környe, 6th-7th c., *Fig. 7.2.1-1a* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Drinking Horn No. 17, 8th–11th c., *Fig. 7.2.9-4a, b* Nagyszentmiklós, bowl, *Fig. 7.2.9-5a* and *2a* Nagyszentmiklós, cup, 8th–11th c., *Fig. 7.2.9-5b, 6b* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c* Nagyszentmiklós, jugs No. 3 & 4, *Fig. 7.2.9-10* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9* Nagyszentmiklós, flat ladles, 8th–11th c., *Fig. 7.2.9-11*
*Ⴗ	T	/d/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:*
*∋	DIAGONAL E	/a/*ɛ/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:*

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[387] Vékony 1987b

Glyph	Name	Historical use	Examples of the Carpathian Basin Rovash glyph in relics and in publications
Ⲩ	FORKED E	/a/ɛ/e/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1, sound:* /a/ɛ/ Nagyszentmiklós, cup, *Fig. 7.2.9-8c, sound:* /a/ Nagyszentmiklós, flat ladles, *Fig. 7.2.9-11, sound:* /e/
⅃	FORKED P	/f-/p/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* ᛘ*, sound:* /p/ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1, sound:* /f/
*ʎ	FORKED G	/-g-/	Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic:* ᓭ
⟋	SIMPLE G	/-g-/	Jánoshida, 670–700, *Fig. 7.2.3-1, in a ligature* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1*
N	GH	/-ɣ/-ɣ-/ /-g-/	Környe, 6th-7th c., *Fig. 7.2.1-1a, mirrored glyph:* И Ozora-Tótipuszta, 7th c., *Fig. 7.2.2-1, in a ligature, mirrored glyph variant:* Н Szarvas, 8th c., *Fig. 7.2.8-1, mirrored glyph:* И Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic:* ᚺ, H Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Drinking horn, 8th–11th c., *Fig. 7.2.9-4a, b* Nagyszentmiklós, bowl, *Fig. 7.2.9-5a, mirrored:* И Nagyszentmiklós, cup, 8th–11th c., *Fig. 7.2.9-5b, 6b* Nagyszentmiklós, bowl, *Fig. 7.2.9-7c, mirrored:* И Nagyszentmiklós, cup, *Fig. 7.2.9-8, mirrored:* И Nagyszentmiklós, Jug No. 5, 8th–11th c., *Fig. 7.2.9-12*
↟	SHARP H	/*x/	Nagyszentmiklós, Drinking Horn, *Fig. 7.2.9-4a,b* Nagyszentmiklós, bowl, *Fig. 7.2.9-5a* and *6a* Nagyszentmiklós, cup, 8th–11th c., *Fig. 7.2.9-5b, 6b* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7* Nagyszentmiklós, Cup No. 23, 8th–11th c., *Fig. 7.2.9-8*
ᛦ	SHARP CH	/x/	Környe, 6th-7th c., *Fig. 7.2.1-1a, in a ligature* Aethicus' Alphabet, *Fig. 7.2.7-2, glyph variant:* ƕ Nagyszentmiklós, Inscription No. 13, 7th-11th c. *Fig. 7.2.9-14* Békés-Povádzug, 11th-12th c., *Sec. 7.2.11*
ↄ	ARCHED I	/i/ĭ/ï/	Jánoshida, 670–700, *Fig. 7.2.3-1, in a ligature* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2,* /i/ Nagyszentmiklós, cup, *Fig. 7.2.9-8c, sound:* /ĭ/ Nagyszentmiklós, Jug No. 6, *Fig. 7.2.9-9, sound:* /ï/ Nagyszentmiklós, Jug No. 5, *Fig. 7.2.9-12, sound:* /ï/
Γ	ANGLED I	/i/	Szarvas, 8th c., *Fig. 7.2.8-1* Ozora-Tótipuszta, 7th c., *Fig. 7.2.2-1, in a ligature, mirrored glyph:* ˥
*ᑫ	CIRCLE ENDED I	/i/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* ꝗ
D	CLOSED J	/j/i̯/ʎ/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9*
ꞵ	ARCHED K	/k/	Nagyszentmiklós, Flat ladles, 8th–11th c., *Fig. 7.2.9-11*

Glyph	Name	Historical use	Examples of the Carpathian Basin Rovash glyph in relics and in publications
ϟ	OPEN K	/k/	Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic:* ϟ, ϟ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1*
A	SHARP K	/k/	Torja, Pot Fragment, 11th c., *Fig. 7.2.10-1*
ʅ	FORKED L	/l/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* ʅ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1*
⟩	SIMPLE L	/l/	Bow from Környe, 6th-7th c., *Fig. 7.2.1-1a*
Ø	LY	/*j/*ʎ/	Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2*
ʒ	OPEN M	/m/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9* Nagyszentmiklós, Jug No. 5, 8th–11th c., *Fig. 7.2.9-12*
ↄ	N	/n/ɲ/	Bow from Környe, 6th-7th c., *Fig. 7.2.1-1a* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Torja, Pot Fragment, 11th c., *Fig. 7.2.10-1*
Y	NG	/ŋ/	Jánoshida, Needle Case, 670–700, *Fig. 7.2.3-1*
ɔ	SHARP N	/n/	Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9*
≀	OPEN O	/o/u/	Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Drinking horn No. 17, 8th–11th c., *Fig. 7.2.9-4a, b* Nagyszentmiklós, bowl, 8th–11th c.., *Fig. 7.2.9-5a, 6a* Nagyszentmiklós, cup, 8th–11th c., *Fig. 7.2.9-5b, 6b* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c* Nagyszentmiklós, jugs No. 3 & 4, *Fig. 7.2.9-10*
Ѫ	TRIPLE O	/ɔ̃/	Nagyszentmiklós, Cup No. 23, 8th–11th c., *Fig. 7.2.9-8* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9*
1	SIMPLE P	/p/	Kiskőrös–Vágóhíd, Chalice, 670–700, *Fig. 7.2.4-1a*
8	ARCHED Q	/q/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* ᛭ Nagyszentmiklós, Jug No. 5, 8th–11th c., *Fig. 7.2.9-12* Nagyszentmiklós, Cup No. 11, *Fig. 7.2.9-13*
▯	CLOSED R	/r/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, bowl, 9th–10th c., *Fig. 7.2.9-5a, 6a* Nagyszentmiklós, Cup No. 22, *Fig. 7.2.9-5b, 2b* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9*
Φ	CLOSED S	/ʃ/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* ɋ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, *Fig. 7.2.9-2, 3* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c, glyph:* Φ Nagyszentmiklós, jugs No. 3 & 4, *Fig. 7.2.9-10* Nagyszentmiklós, Jug No. 5, 8th–11th c., *Fig. 7.2.9-12*

Glyph	Name	Historical use	Examples of the Carpathian Basin Rovash glyph in relics and in publications
ǀ	SZ	/r/s/	Ozora, Silver Vessel, 670–700, *Fig. 7.2.2-1* Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2* Jánoshida, Needle Case, 670–700, *Fig. 7.2.3-1* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Jug No. 6, 8th–11th c., *Fig. 7.2.9-9* Nagyszentmiklós, Jug No. 5, *Fig. 7.2.9-12* Nagyszentmiklós, Cup No. 11, *Fig. 7.2.9-13* Torja, Pot Fragment, 11th c., *Fig. 7.2.10-1*
Ͽ	CLOSED T	/t/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Nagyszentmiklós, Drinking Horn, *Fig. 7.2.9-4a, b* Nagyszentmiklós, bowl, 8th–11th c., *Fig. 7.2.9-5a, 6a* Nagyszentmiklós, cup, 8th–11th c., *Fig. 7.2.9-5b, 6b* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c* Nagyszentmiklós, flat ladles, 8th–11th c., *Fig. 7.2.9-11*
ꭓ	OPEN T	/t/	Kunágota, Jug, beg. 7th c., *Fig. 7.2.6-1* Ozora, Silver Vessel, 670–700, *Fig. 7.2.2-1* Kiskőrös–Vágóhíd, Chalice, 670–700, *Fig. 7.2.4-1a, in a lig.*
*Ꭓ	SHARP T	/t/	Környe, 6th–7th c., *Fig. 7.2.1-1a, glyph:* Ꭓ Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic:* ʈ
ᛟ	SHARP U	/u̯/	Nagyszentmiklós, Jug No. 6, 9th–10th c., *Fig. 7.2.9-9*
ʔ	ARCHED UE	/y/	Jánoshida, 670–700, *Fig. 7.2.3-1, in a lig., sound:* /y/, *glyph:* ⋟ Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2, calligraphic:* ϰ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1, sound:* /y/ Nagyszentmiklós, Drinking Horn, *Fig. 7.2.9-4a, glyph:* ⋟ Nagyszentmiklós, Cup No. 22, *Fig. 7.2.9-6b, glyph:* ⋟ Nagyszentmiklós, Bowl No. 10, *Fig. 7.2.9-6a, glyph:* ⋟ Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7, glyph:* ⋟ Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c*
ꟻ	OPEN V	/β/v/	Bow from Környe, 6th-7th c., *Fig. 7.2.1-1a, sound:* /β/ Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1, sound:* /β/ Aethicus' Alphabet, 8th c., *Fig. 7.2.7-2 (Leipzig copy)* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Nagyszentmiklós, Bowl No. 9, *Fig. 7.2.9-7, sound:* /β/ Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c, sound:* /v/ Nagyszentmiklós, Jug No. 6, *Fig. 7.2.9-9b, sound:* /β/v/ Nagyszentmiklós, jugs, *Fig. 7.2.9-10, sound:* /β/ Nagyszentmiklós, flat ladles, *Fig. 7.2.9-11, sound:* /β/ Nagyszentmiklós, Jug No. 5, *Fig. 7.2.9-12, sound:* /β/

Glyph	Name	Historical use	Examples of the Carpathian Basin Rovash glyph in relics and in publications
	OPEN Z	/-z-/	Aethicus' Alphabet, *Fig. 7.2.7-2, calligraphic:* Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Bowl No. 8, 8th c., *Fig. 7.2.9-2* Nagyszentmiklós, Drinking Horn, *Fig. 7.2.9-4a* Nagyszentmiklós, bowl, *Fig. 7.2.9-6a, glyph:* Nagyszentmiklós, cup, *Fig. 7.2.9-6b, glyph:* Nagyszentmiklós, bowl, *Fig. 7.2.9-7, glyph:* Nagyszentmiklós, Cup No. 23, *Fig. 7.2.9-8c* Nagyszentmiklós, jug, *Fig. 7.2.9-9, glyph:*

Table 7.1.2-1: The attested Carpathian Basin Rovash graphemes and their use

7.1.3. Rovash Numerals

Carpathian Basin Rovash has only two known numerals, as presented in *Table 7.1.3-1*, which are identical to the Szekely-Hungarian Rovash numerals. In spite of their similarities to the Roman numerals, they belong to the rovash graphemes (*Sec. 9.1.7*).

Glyph	Name of the rovash numeral	Examples of the glyph in relics
V	FIVE	Kiskőrös–Vágóhíd, Chalice, 670–700, *Fig. 7.2.4-1b* Budapest-Tihany square, turn of the 8th c., *Fig. 7.2.5-1*
X	TEN	Ozora, Silver Vessel, 670–700, *Fig. 7.2.2-1*

Table 7.1.3-1: The rovash numerals in CBR and the origin of each glyph

7.1.4. Punctuation

Carpathian Basin Rovash has two known punctuation marks used for separating words or sentences (*Table 7.1.4-1*).

Glyph	Name	Examples of the glyph in relics
+	WORD SEPARATOR VERTICAL CROSS	Bowl No. 8, Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-2, 3*
|	WORD SEPARATOR VERTICAL BAR	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1* Nagyszentmiklós, Drinking Horn No. 17, *Fig. 7.2.9-4a, b* Bowl No. 9 from Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-5a* and *-2a* Cup No. 22 from Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-5b* and *-2b* Bowl No. 10 from Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-7* Cup No. 23 from Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-8c* Jug No. 6 from Nagyszentmiklós, 9th–10th c., *Fig. 7.2.9-9*

Table 7.1.4-1: CBR punctuation marks and the origin of each glyph

7.1.5. Ligatures

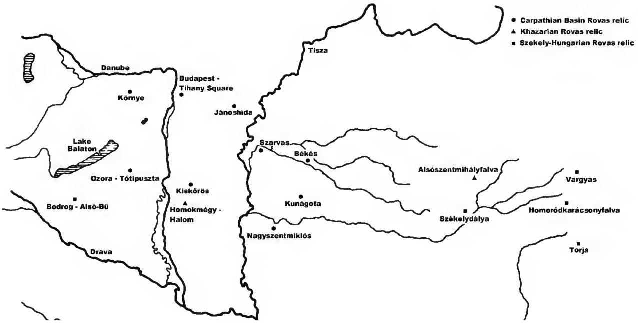
Ligatures were occasionally used in Carpathian Basin Rovash. *Table 7.1.5-1* presents the set of the ligatures found in the known relics. These ligatures are only stylistic; therefore, their use is optional.

Glyph	Name	Transcrip-tion	Constituents	Examples of the glyph in relics
	CHCH	/^{u}x^{u}x/	SHARP CH /x/ + SHARP CH /x/	Környe, 6th-7th c., *Fig. 7.2.1-1a*
	DGH	/dɣ/	> SHARP D /d/ + И GH /ɣ/	Szarvas, Needle Case, 8th c., *Fig. 7.2.8-1*
	ING	/iŋ/	ARCHED I /i/ + NG /ŋ/	Jánoshida, 670–700, *Fig. 7.2.3-1*
	IGH	/iɣ/	ANGLED I /i/ + И GH /ɣ/	Ozora, 670–700, *Fig. 7.2.2-1*
	RG	/rg/	□ CLOSED R /r/+ SIMPLE G /g/	Jánoshida, 670–700, *Fig. 7.2.3-1*
	TA	/ta/	OPEN T /t/ + FORKED A /a/	Kiskőrös, 670–700, *Fig. 7.2.4-1a*
	UENG	/yŋ/	ARCHED UE /y/*ø/ + NG /ŋ/	Jánoshida, 670–700, *Fig. 7.2.3-1*
	WORGH	/β^{o}rɣ/	OPEN V /β/ + □ CLOSED R /r/ + И GH /ɣ/	Szarvas, 8th c., *Fig. 7.2.8-1*

Table 7.1.5-1: CBR ligatures and the origin of each glyph

7.2. Carpathian Basin Rovash relics

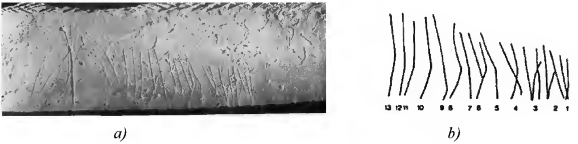
Map 7.2-1 shows the locations of some CBR, SR, and SHR archaeological finds in the Carpathian Basin.



Map 7.2-1: Map of rovash archaeological finds in the Carpathian Basin between the 7th and 14th centuries

7.2.1. Bow of Környe

The remains of a bow were discovered in the grave No. 60 of a cemetery in Környe (Hungary, see *Map 3.4.1-2*) from the end of the 6th or the beginning of the 7th century (*Fig. 7.2.1-1a*).[388] It was first published by I. Erdélyi.[389]



a) b)

Figure 7.2.1-1a: The photograph of the Rovash Inscription of Környe from the end of the 6th century or the beginning of the 7th century, and *b)* the drawing of the right-hand side of the inscription. The symbol 𐲦 in the inscription is presumably the realization of the simplified glyph variant of the reconstructed grapheme *𐲦 SHARP T /t/.

On the left-hand part of this relic (*Fig. 7.2.1-1a*), there is a ligature, and on the right-hand part, a longer inscription (*Fig. 7.2.1-1b*). The longer text is an early Hungarian magical text for ensuring the successful operation of the bow (*Fig. 7.2.1-1b*[390] and *Table 7.2.1-1*). The order of the first three words (/tⁱɣ ᵚɣᵃt lᵉβᵉld/ 'Shoot with [the] bow') is in correspondence of the SOV (*Subject-Object-Verb*) word order typical of the Ancient Hungarian linguistic period.[391] In the text, the /tⁱɣ/ means 'you', /ᵚɣᵃt/ stands for 'bow' in *acc.*, and /lᵉβᵉld/ is 'shoot' in *imp.* The affix /-l/ in the word

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[388] Erdélyi 1961, pp. 279–280; Salamon & Erdélyi 1971, pp. 51–52; Vásáry 1972, p. 339; Erdélyi 1982, p. 183, p. 209

[389] Erdélyi 1969, pp. 209–210

[390] Vékony 1987a, p. 89

[391] TNyt., Vol. 1, p. 620

>ȷꟻȷ /lᵉβᵉld/ had a causative function in the Ancient Hungarian linguistic period.[392] This inscription is probably the earliest written record of the Hungarian language. This relic shows that at the end of the 7th century, a Hungarian-speaking population already lived in the Carpathian Basin.

Written with normalized CBR font	)ȷ ȷȷ) >ȷꟻȷ ꓘИ Иꓘ
IPA phonetic transcription	/tˡɣ ʷɣᵃt lᵉβᵉld ɲʷlᵃl ᵋlᵋn/
Interpretation in current Hungarian	*Te íjat lövesd nyíllal ellen!* In the current style: *[Ezzel az] íjjal lőjj nyilat ellene!*
Translation from Hungarian	‘Shoot [the] arrow with [the] bow against [him]!’

Table 7.2.1-1: Transcription of the right-hand part of the Környe Relic. Vékony’s transcription was improved by linguist E. Zelliger.[393] The transcription of the last two words (/ɲʷlᵃl ᵋlᵋn/) is possible; however, more evidence is needed for support.

The language of the ligature on the left-hand part is probably Turkic, in which the change /q/>/x/ happened.[394] The word-end /-q/ of the original Proto-Turkic verb /*oq/ remained in the majority of the Turkic languages. However, in the Ogur-type Chuvash /-q/ became /-x/, and in several cases disappeared[395] (see the Chuvash noun /uxa/ ‘arrow, bow’[396]). The change /-q/>/-x/ sporadically occurred in other Turkic languages as well, and it occurred also in Cuman.[397] Therefore, according to the author, the ligature ⩚ on the left part of the relic (left part of *Fig. 7.2.1-1a*) is a duplication of the CBR ⅄ SHARP CH /x/ (*Table 7.2.1-2*). Due to the historical background, the language of the inscription is most probably the Ogur-type Onogur. The Turkic ligature has a similar meaning to the Hungarian sentence. Consequently, the Környe Relic is bilingual. This fact supports the coexistence of the Turkic and the Hungarian populations in that time period. (*Sec. 3.4.1*).

Written with normalized Carpathian Basin Rovash font	⩚
IPA phonetic transcription	/ᵒxᵒx/
Translation from Ogur (probably Onogur)	‘a lot of arrows’[398]

Table 7.2.1-2: Transcription of the leftmost part of the Környe Relic

A specific feature of the inscription is that the RTL text of the right side (*Fig. 7.2.1-1b*) looks to be carved in the LTR direction, based on the decreasing letter-size (*Fig. 7.2.1-1b*). Moreover, the glyphs of the inscription are significantly distorted. Consequently, the carver of the text probably did not know the graphemes of the script; the inscription is a copy of another.[399]

7.2.2. Silver Vessel of Ozora-Tótipuszta

The Silver Vessel of Ozora-Tótipuszta (Hungary, see *Map 3.4.1-2* and *Map 7.2-1*) was created in the last third of the 7th century (Middle Avar Period).[400] This relic is preserved in the Hungarian National Museum. On the bottom of the vessel, there is a CBR inscription written in Ogur (probably

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[392] D. Bartha 1991, pp. 60–104

[393] Vékony 1987a, p. 89; Vékony 2004a, pp. 203–207; Zelliger, Erzsébet 2010–2011: *Personal communication*

[394] Vékony 2004a, p. 215

[395] Tenishev 1984, p. 193; Róna-Tas 1971, p. 392; Róna-Tas 1979

[396] Sevortjan 1976, p. 438

[397] Tenishev 1984, p. 192; Györffy 1940, p. 463

[398] Danka, Balázs 2013: *Personal communication*

[399] Vékony 1987a, p.89

[400] Erdélyi & Ráduly 2010

Onogur, since the Onogurs probably occupied the Carpathian Basin in 670), see *Fig. 7.2.2-1*;[401] its transcription and meaning are presented in *Table 7.2.2-1*.[402]

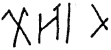


Figure 7.2.2-1: The inscription on the Silver Vessel of Ozora-Tótipuszta[403]

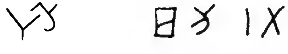
Written with normalized Carpathian Basin Rovash font	ΧΉΙ Χ
IPA phonetic transcription	/10 sïɣᵃt/
Translation from Ogur	‘10 [pieces] fit [inside]’

Table 7.2.2-1: Transcription of the Ozora-Tótipuszta Relic, last third of the 7th century

The symbol Ή is a ligature of the Γ ANGLED I /i/ and N GH /ɣ/, the glyph Ͷ variant of N GH was used.

7.2.3. Needle Case of Jánoshida

In 1958, a needle case from the last third of the 7th century was discovered by historian–archaeologist I. Erdélyi in Jánoshida (Hungary, see *Map 7.2-1*).[404] First D. Csallány[405] then Turkologist I. Vásáry acknowledged it has a rovash script from the Avar age.[406] *Fig. 7.2.3-1* presents the two sides of the needle case.[407]



a) b)

Figure 7.2.3-1: Two sides of the Rovash Inscription of the Needle Case of Jánoshida

Written with normalized Carpathian Basin Rovash font	Yϒ \ ⊟Y IX
Written with normalized CBR font without ligatures	YYɔ \ ⟋□Yʔ IX
IPA phonetic transcription	/iŋɛ/ \ /bᵃs ynʸr'g/
Translation from Ogur	‘Needle, \ defeat Üngür!’

Table 7.2.3-1: Transcription of the Jánoshida Relic from the last third of the 7th century

The Turkic /ignɛ/ ‘needle’[408] has different variations, see Khakas /ĭŋe/, Shor /iŋɛ/, Turkmen /iŋŋɛ/.[409]

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[401] Vásáry 1972, pp. 343–344; Szádeczky-Kardoss 1990, pp. 206–228, 452–457; Garam & Kiss 1992, p. 18; Róna-Tas 1996a, p. 108; Szádeczky-Kardoss 1998

[402] Vékony 2004a, p. 195

[403] Vékony 2004a, pp. 203–207

[404] Erdélyi 1958a, p. 39, *Table XLIV/2*; Erdélyi 1958b, pp. 55–56; Erdélyi 1961, pp. 279–280

[405] Csallány 1968, pp. 302–303

[406] Vásáry 1972, pp. 337–338

[407] Vékony 1987a, p. 74, 76

[408] ED 110

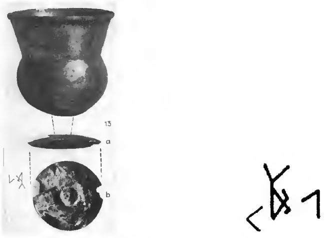
[409] Sevortjan 1978, p. 367

The interesting feature of the relic is the extensive use of ligatures: ɤ /iŋ/, Ɣ /yŋ/, ⊟ /r^{i}g/. Archaeologist G. Vékony showed that in the Ogur dialect used in the Carpathian Basin, the /v/ and /j/ *prosthesis* at the beginning of the words was missing, unlike in other Ogur dialects.[410]

7.2.4. Chalice of Kiskőrös–Vágóhíd

Archaeologist Gy. László discovered a silver chalice in a cemetery in Kiskőrös-Vágóhíd (Hungary, see *Map 7.2-1*).[411] Archaeologist É. Garam dated the age of the relic to the Middle Avar Period (last third of the 7th century).[412] There are rovash symbols carved onto the bottom of the drinking cup (*Fig. 7.2.4-1a*).

One of the possible transcriptions is /p^{u}t'ə/ 'louse'; this word is known in the Ogur-type Chuvash. In this case, the inscription is surely in Ogur. The other possible transcription is /buta/ '[camel] foal'. This reading is based on the fact, that in the Proto-Turkic language there were unvoiced plosives (/p-/, /t-/, and /k-/) at the beginning of the words, which later changed to voiced plosives: /p-/>/b-/, /t-/>/d-/, and /k-/>/g-/.[413] Therefore, possibly in the age of the inscription, the pronunciation was already /buta/ but it was written with /p/ due to the conservativity of the orthography. The inscribed word could be the name or nickname of the owner.



a) *b)*

Figure 7.2.4-1a) Chalice of Kiskőrös-Vágóhíd and *b)* its inscription, last third of 7th century[414]

Written with normalized Carpathian Basin Rovash font	Ɣ 1
IPA phonetic transcription	/p^{u}t'ə/ *or* /b^{u}ta/ (*if the script kept an earlier form due to the inherent conservativity of the scripting*)
Translation from Ogur (probable Onogur)	'louse' *or* '[camel] foal'

Table 7.2.4-1: Transcription of the Kiskőrös-Vágóhíd Relic, last third of the 7th century

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[410] Vékony 2004a, p. 188

[411] László 1955, pp. 160–161; Vásáry 1972, p. 344

[412] Garam 1976, pp. 143–144

[413] Vásáry, István 2010–2011: *Personal communication*

[414] Vékony 2004a, p. 203

The left symbol of the drawing in *Fig. 7.2.4-1/b* is probably the rovash numeral V ‘five’. According to archaeologist–historian G. Vékony, it is earlier than the textual inscription; probably it denoted the weight or the value of the cup.[415]

7.2.5. Chalice of Budapest District 14—Tihany Square

In 1941, a chalice from the turn of the 8th century was discovered in a cemetery in District 14 of Budapest, Tihany Square (*Fig. 7.2.5-1* and *Map 7.2-1*).[416] There are etched symbols on the bottom of the relic. According to archaeologist Vékony, the three vertical lines constitute a tamgha, and the left symbol is a numeral: V ‘five’.[417]

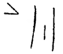

Figure 7.2.5-1: The inscription of the chalice from Budapest—Tihany Square from the turn of the 8th century

7.2.6. Jug of Kunágota

The inscription in *Fig. 7.2.6-1*, discovered by archaeologist É. Garam,[418] in Kunágota (Hungary, see *Map 3.4.1-1* and *Map 7.2-1*) is on a jug.[419] According to archaeologist G. Szenthe, the jug is from the middle of the 7th century.[420] The transcription and the meaning of the inscription are shown in *Table 7.2.6-1*.[421] This inscription is the earliest known Carpathian Basin Rovash relic.

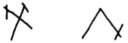

Figure 7.2.6-1: The Inscription of Kunágota[422]

Written with normalized Carpathian Basin Rovash font	Ϫ Ѧ
IPA phonetic transcription	<*tamgha*> /ᵃt'/
Transcription with Latin-based script with punctuation	*N. atï*
Translation from Common Turkic (surely Eurasian Avar)	‘N. [is] his/her name’

Table 7.2.6-1: Transcription of the Kunágota Relic, middle of the 7th century

The first symbol (from right) is a tamgha representing a personal name or a clan. The tamgha was a symbol of property and served for marking the authenticity of the owner or the writer.[423] Tamgha symbols were frequently applied in inscriptions in the Eurasian Steppe.[424] The word /at/ in Common Turkic means *name*. Its Ogur-type Chuvash version is /jat/; the chronology of the transition /at/>/jat/ is unknown.[425] Accordingly, the inscription is presumably not Ogur, but Common Turkic. As in the 7th century, there was only one significant Turkic population in the Carpathian Basin that could be Common Turkic: the Eurasian Avars (the insignificant Kuturgur population was surely Ogur).[426] This relic supports the theory that the Eurasian Avars used a Common Turkic language.

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[415] Vékony 2004a, p. 203

[416] László 1942, *Fig. 1*, 1955, p. 45, Image 1; Vásáry 1972, pp. 343–344

[417] Vékony 2004a, p. 202

[418] Garam 1976

[419] Bóna 1982–83, p. 140

[420] Szenthe, Gergely 2012: *Personal communication*

[421] Vékony 1987a

[422] Vékony 1987a, p. 85

[423] Vásáry 2003

[424] László 1955; Erdélyi 1982, p. 184

7.2.7. Aethicus' Alphabet

The 7th/8th century book "*Cosmographia Aethici Istrici ab Hieronymo ex graeco in latinum breviarium redacta*" (shortly *Cosmography*) contains an alphabet.[427] This together with the original manuscript of the book was recorded in the mid-8th century.[428] The Cosmography describes the travels of **Aethicus** (falsely *Aethicus Ister*[429])—the protagonist—around the world. *Fig. 7.2.7-1* presents the Leipzig copy of the manuscript of the book.[430] H. Löwe compared it to the Old Turkic script; however, his results were refuted by Turkologists.[431] In Hungary, Turkologist A. Róna-Tas first presented the work of Löwe.[432] It is widely known that **Aethicus' Alphabet** shows similarities with the Glagolitic script. Löwe supposed that the author of the Cosmography, *Hieronimus* (also called *Pseudo-Jerome*) was a pseudonym of Saint Virgil Bishop of Salzburg (*App. B*).[433] G. Billanovich and N.G. Wilson also identified Hieronimus and Aethicus as Saint Virgil of Salzburg;[434] therefore the alphabet was recorded not later than 784, when Saint Virgil died. However, others have different theories: K. Hillkovitz dates the alphabet to the mid-8th century, but supposes an unknown author from Bavaria;[435] F. Brunhölzl dated it in the second half of the 7th century and supposed that the author lived in the Patriarchate of Aquileia;[436] O. Prinz said that Aethicus was an immigrant who came into the Frankish Empire in the mid-8th century;[437] and M. Herren suspected that the Cosmography was made shortly after 727 and the author lived in the Frankish Empire first, then in Ireland and England, and lastly in Bobbio (Italy).[438]

According to Vékony, the alphabet is a calligraphic and distorted version of Carpathian Basin Rovash.[439] This theory is in accordance with Löwe's, since he supposed that the author of the Cosmography recorded the Avars' script.[440] His statement was supported by others.[441] It is noteworthy that in this case the term "*Avars*" means the population of Avaria in the 8th century, independently from the actual nationality of the people living there. The original manuscript was most probably made in the mid-8th century; therefore, it contains an earlier version of CBR than the majority of the Carpathian Basin Rovash relics.

The effects of the calligraphic distortions can be observed on another example. M. Bél, a Hungarian scholar in the 18th century, published the first printed book about SHR. In his work, he modified the well-known SHR glyphs in a similar way as can be observed in Aethicus' Alphabet. Compare *Fig 9.2.9-1* with *Table 9.1.4-1.*

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[425] Vásáry, István 2010–2011: *Personal communication*
[426] Vékony 2004a, p. 197
[427] Wuttke 1853; MGH, 1993
[428] Löwe 1975; Prinz 1981
[429] Prinz 1993, p. 1
[430] Vékony 1987a, p. 147
[431] Löwe 1976
[432] Róna-Tas 1980, vol. III, p. 117
[433] Löwe 1952; Löwe 1975, p. 1–16
[434] Billanovich 1958, p. 82; Reynolds & Wilson 1974, p. 92
[435] Hillkowitz 1973
[436] Brunhölzl 1975, p. 63
[437] Prinz 1993, p. 18, 44–52
[438] Herren 2011, p. LXI, LXXVII
[439] Vékony 2004a, p. 232
[440] Löwe 1952
[441] Kronsteiner 1985, p. 123; cf. Kahl 1985, p. 118

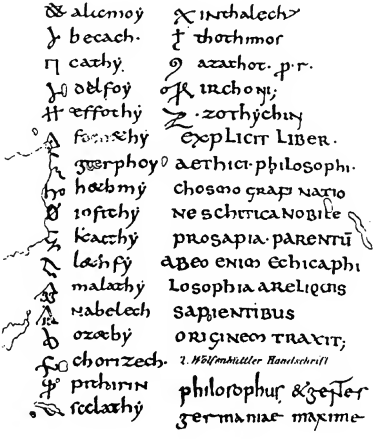
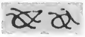
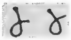


Figure 7.2.7-1: The Leipzig copy of Aethicus' Alphabet

Aethicus' original manuscript was lost in time; only copies survived. Copiers of the alphabet slightly adapted the shapes of the graphemes to Latin and Greek scripts. Therefore, the Alphabet by Aethicus became strongly calligraphic, distorted and thus difficult to identify. The similar symbols of *malathy* and *nabelech* in *Fig. 7.2.7-1* can be eliminated; they are surely the results of later replacement. The analysis of Aethicus' glyphs is presented in *Table 7.2.7-1*, and the detailed genealogy of CBR graphemes in *Ch. 4.*

Glyphs of Aethicus	**Names of Aethicus' graphemes**	**Typical or reconstructed CBR glyph**	**Cognate graphemes**
	*alamoy* The copies are shaped to the Carolingian minuscule ƛ A.[442]	*∋ DIAGONAL E /ɑ/ɛ/ Its sound value /ɑ/ in CBR was surely inherited from Proto-Rovash (*Subch. 4.1*).	PR ∋ DIAGONAL E /ɛ/, SHR 𐳉 E /ɛ/eː/, Glagolitic Э JEST /ɛ/
	*becach*	X B /b/	PR X B /b/, SHR X B /b/

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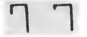
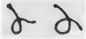
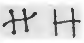
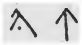
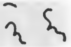
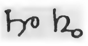
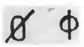
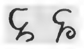
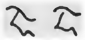
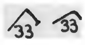
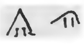
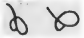
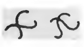
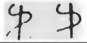
[442] Carolingian minuscule, article in Encyclopædia Britannica; Vékony 2004a, p. 233

Glyphs of Aethicus	**Names of Aethicus' graphemes**	**Typical or reconstructed CBR glyph**	**Cognate graphemes**
	*cathy*	*⍂ CS /*t͡ʃ/	SR ⍂, CS /t͡ʃ/s/, SHR □, ⍂ CS /t͡ʃ/
	*delfoy*	*Ⴈ T /d/	SHR Ⴈ T /d/t/
	*effothy* < *efothy* (*German pronunciation*) < **euothy* Originally this grapheme denoted /ɣ/.[443]	И, N GH /ɣ/	SR N GH /ɣ/g/ SHR ϟ GH /ɣ/
	*fomethy:* The first (Leipzig) copy is correct; the second (Oxford) copy is distorted.	ꟻ OPEN V /β/v/	PR ꟻ OPEN V /β/b-/, SR ꟻ OPEN V /β/b-/, SHR ꟻ OPEN V /β/
	*garphoy*	*ʎ FORKED G /g/	SR ʎ FORKED G /g/, SHR Λ G /g/
	*hethmy:* In the 8th century, in German orthography, the letter *h* also denoted /x/.[444]	ᛦ SHARP CH /x/	Glagolitic Ⱒ HER /x/
	*iofithy*: The second (Oxford) copy is misleading; it was affected by the shape of the Greek PHI ϕ, which was obviously known by the copier.	Ø LY /j/ʎ/	SHR θ LY /j/ʎ/
	*kaithy*: The upper side shows modification due to calligraphic handwriting.	ᛂ OPEN K /k/	SHR ᛂ OPEN K /k/, Glagolitic Ⰽ, ⰽ KAKO /k/
	*lethy*: Greek λ LAMBDA influenced the copier.	ᚷ FORKED L /l/	SHR Ʌ L /l/
	*nabelech:* The copier created it instead of the probably damaged original glyph.[445]	-	-
	*malathy*: The copier created it instead of the probably damaged original glyph.[446]	-	-
	*ozechy*	} OPEN O /o/u/	SHR Ↄ O /o/u/
	*chorizech:* According to Vékony, the origin of the grapheme-name was *q* that was transliterated with *ch*.[447] Hence its sound value could be /q/.	8 ARCHED Q /q/	SR 8 ARCHED Q /q/
	*pithirin*	⅃ FORKED P /f-/p/	SR ⅃ FORKED P /p/, SHR Ǝ P /p/

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[443] Vékony 2004a, p. 236

[444] Vékony 2004a, p. 236

[445] Vékony 1997a, p. 97

[446] Vékony 1997a, p. 97

[447] Vékony 2004a, p. 237

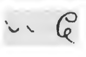
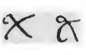
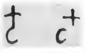
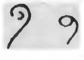
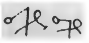
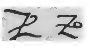
Glyphs of Aethicus	**Names of Aethicus' graphemes**	**Typical or reconstructed CBR glyph**	**Cognate graphemes**
	*salathy*: The first (Leipzig) copy was damaged.	Φ, Ο CLOSED S /ʃ/	SHR Φ US /ʃ/, Glagolitic Ⰶ ZHIVETE /ʒ/
	*inthalech*	ʔ, ∋ ARCHED UE /y/*ø/	SR ʔ ARCHED UE /ø/y/, Glagolitic Ⱏ JERI /ə/
	*thotimos*: The half circle presumably represents the angle in the bottom part of the supposed original glyph X.	*X SHARP T /t/	ESR + SHARP T /t/, SHR X SHARP TY /c/
	*azatoth p(ro) r*. Its upper side shows modification due to calligraphic handwriting form. The glyph in the Leipzig copy resembles the rovash glyph ǀ /s/. The meaning of Aethicus' grapheme-name: 'the glyph of the /s/ [or /z/] is used for /r/'.[448]	ǀ SZ /s/r/	SHR ǀ SZ /s/, SHR ⟋ SIMPLE R /r/
	*irchoni* < *Onogur* /ïrɣun/ 'written grapheme' This glyph proves that the ᑫ /i/ï/ existed in the 8th c., in CBR.	*ᑫ CIRCLE ENDED I /i/	PR: ᑫ CIRCLE ENDED I /i/, Glagolitic Ⰹ IZHE /i/j/
	*zotichin* It was shaped to the Latin *z* by the copier.	∃ OPEN Z /z/	SHR ⍁ Z /z/

Table 7.2.7-2: Analysis of Aethicus' Alphabet.[449] In the first column there are two glyphs: the one on the left is from the Leipzig copy (earlier) and the one on the right is from the Oxford copy (later).[450] In the third column, the presumed original CBR glyphs are reconstructed.

The grapheme *fomethy* verifies the supposition that the original alphabet reached Aethicus through a *Hungarian*-language environment, since the consonant /f/ did not exist in Ogur. Consequently, in the time of the recording (mid-8th century) this alphabet was used by Hungarians.

The supposed original CBR glyphs of *϶ DIAGONAL E /a/ɛ/, *ᑫ CIRCLE ENDED I /i/, *ʎ FORKED G /g/, and *X SHARP T /t/ were reconstructed based on their cognate rovash graphemes and *Ц CS /t͡ʃ/ was reconstructed based on the appropriate SHR grapheme, taking into account their probable relationship (*Subch. 4.1*). All other graphemes were reconstructed based on glyphs found in CBR relics.

7.2.8. Needle Case of Szarvas

On the 27th of April 1983, I. Juhász, archaeologist of the Szarvas Museum, discovered a grave, and in this grave she found a bone needle case near the town of Szarvas (Hungary, see *Map 7.2-1*).[451]

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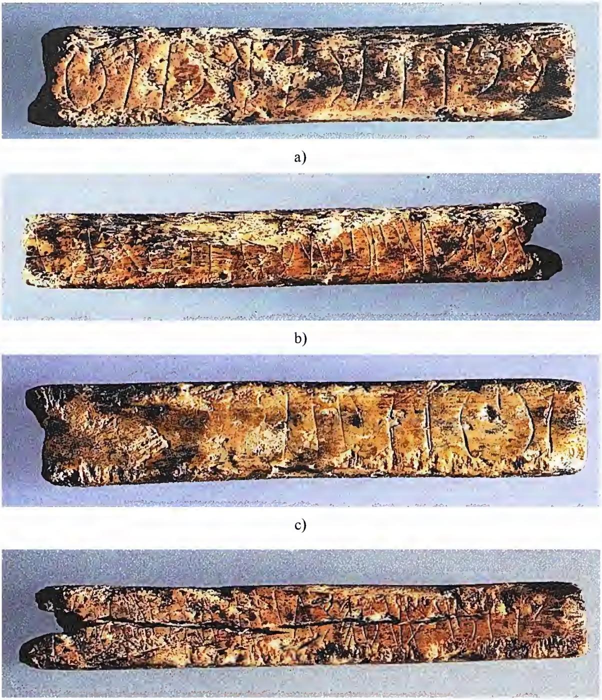
[448] Vékony 2004a, p. 240

[449] Vékony 2004a, pp. 217–230

[450] Vékony 1997a, p. 149

[451] Juhász 1983; Juhász 1985

On the needle case, there is a magical inscription from the second half of the 8th century.[452] A. Róna-Tas, Cs. Bálint, and I. Vásáry stated that the alphabet of this inscription is identical to the graphemes of the Golden Treasure of Nagyszentmiklós (which was found about 100 km from Szarvas, as Róna-Tas noted).[453] There are also other needle cases from this age with inscriptions. *Fig. 7.2.8-1a, b, c, & d* presents the sides of the needle case using, photographs taken by A. Dabasi.



a)

b)

c)

d)

Figure 7.2.8-1a, b, c, d: The four sides of the bone Needle Case of Szarvas[454]

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[452] Róna-Tas 1996a, p. 108

[453] Róna-Tas 1996a, p. 110; Róna-Tas 1999a, p. 132; Bálint 2002; Vásáry 2003

[454] Garam 2002b, p. 109

Fig. 7.2.8-2 presents the drawing of the inscription made by the historian–archaeologist I. Erdélyi in 1984. The edges of the bone needle case are worn; therefore, the top and bottom edges of some graphemes are not clearly visible.[455] The transcription (*Table 7.2.8-1*) was originally made by G. Vékony and later modified by E. Zelliger.[456] The text was an alliterative verse.

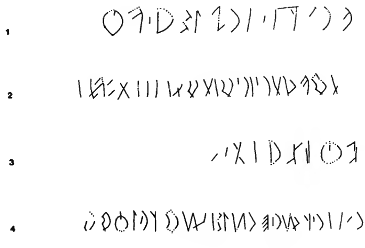


Figure 7.2.8-2: The inscription of the bone Needle Case of Szarvas.[457]

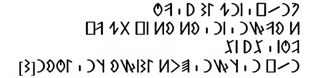
Written with normalized Carpathian Basin Rovash font	
IPA phonetic transcription	/yngʸr : ˈsnᵋk im ˈʎ : βᵃᶴᵘ [t]ⁱɣ tᵉβᵋdɣᵉn : ⁱsᵉn : tⁱɣ tⁱɣ sᵘrˠ bᵉkˠ βᵒrɣ fᵋᶴᵋs : ᵋlᵉi̯ sᶟl […] ʸngʸr nᵉ̂ : adɣᵒn : [ᶟzdɣ] imᵉsd ᵉɣt ɛn : iʃtᵋnᵋ[m]/
Translation from Hungarian	‘Here is an iron [needle] against [the] demon Üngür; [The] needle should be pricked into the demon; needle, needle, stab, poke, sew! [Who] unstitches […]; Üngür shall not give [curse]; blast him, my God!’

Table 7.2.8-1: Transcription of the Needle Case of Szarvas

The name *Üngür* was known at this time in several languages. It meant ‘cave,’ ‘demon,’ and ‘devil,’ originating from the Turkic word *üng* ‘[to] dig’.[458] The word /yŋgyr/ exists in Uyghur; the version /yŋgir/ is in Kazakh.[459] The consonant /-ŋ-/ existed in the beginning of the Ancient Hungarian linguistic period (*Table C-1*) as a phoneme, occurring exclusively in the middle of the word, but later became solely an allophone.[460] Instead of /yŋgyr/, the version /yngyr/ was possible in Hungarian before the time the relic was made. Another possibility is that the glyph Ↄ N was employed instead of Y NG /ŋ/ in the relic, based on the strong similarity of the two Carpathian Basin Rovash graphemes. In this case the word □⁄Ↄʔ /yngʸr/ could be transcribed as /yŋgʸr/.

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[455] Vékony 1987b, *Fig. 2*

[456] Vékony 1987a; Zelliger, Erzsébet 2010–2011: *Personal communication*

[457] Vékony 1985b, p. 1134

[458] Vékony 2004a, p. 166, cf. ED, p. 169

[459] Vékony 2004a, p. 166

[460] E. Abaffy 2003a, pp. 116–123

The word *ísz* /iːs/ meant 'sickness demon' in Hungarian. There is evidence that the word *ísz* meant 'devil' or 'demon' in the Old Hungarian linguistic period (*Table C-1*) and later.[461]

In the first row, 3Γ /im/ 'such way' is an adverb composed of a demonstrative pronoun.[462] The adjectival demonstrative pronoun D 'such' was represented as *ily* in the Latin-based Old Hungarian orthography. The digraph *l*, *ly*, and *li* in the Old Hungarian orthography indicate that their original pronunciation was /ʎ/.[463] Consequently, the pronunciation of the demonstrative pronoun D 3Γ was /im ˈʎ/, so the CBR D CLOSED J represented the sound /ʎ/ besides /j/.

The bone needle case of Szarvas was made in the Ancient Hungarian linguistic period, when the consonants /d͡ʒʲ/ and /ɲ/ first appeared in the Hungarian language. The /d͡ʒʲ/ evolved through the palatalization of /d/. In some cases, the /d͡ʒʲ/ resulted from the following transition: /d/+/ɣ/j/>/d͡ʒʲ/.[464] In 2009, the author of this book realized that the writer of the relic used the ligature ʬ of the > /d/ and N /ɣ/ in the words /tᵉβᵋdɣᵉn/ 'should be pricked', /adɣᵒn/ 'give' and in the expression /imᵉsd ᵉɣt/ 'blast him'. In the first two words, the phoneme-pair /dɣ/ changed to /d͡ʒʲ/ in the Ancient Hungarian linguistic period. The sound /d͡ʒʲ/ already appeared in speech at the time when the relic was made (in the 8th century), and the writer might have denoted it with the ligature ʬ. Consequently, the pronunciation of the phoneme-pair /dɣ/ differed from the constituents /d/ and /ɣ/. In this case, an etymological spelling is supposed.

E. Zelliger claimed that the transcription of ▯Ꮋ in the second row is /βᵒrɣ/ 'sew', where /ɣ/ was the symbol of the imperative mood.[465] The ligature ▯Ꮋ was probably composed of ᒣ OPEN V /β/, ▯ CLOSED R /r/, and И GH /ɣ/. According to the author of this book, ᒣ OPEN V and ▯ CLOSED R were carved first, and then there was no more space on the surface of the bone (this row is the longest one of the rovash text). Therefore, И GH /ɣ/ was inserted between the last two graphemes by forming the ligature: using the vertical lines of ᒣ OPEN V and ▯ CLOSED R.

In the third row, the second word DӼ /ᵋlᵉi̯/ is an adverb or a verbal prefix. The lineage of the second syllable of this word is /eɣ/>/ei̯/>/eː/[466]. The word /ᵋlᵉi̯/ became later *elé* /ɛleː/, and then it was shortened to *el-* /ɛl/.[467] Consequently, in this case the CBR D CLOSED J denoted /i̯/ and not the usual /j/. Note that the pronunciation of /i̯/ is similar to /j/. The last word of the third row has partly worn off; only its first two graphemes remain visible, namely the I SZ /s/ and the Ӽ FORKED L /l/, where a vowel can be supposed between them: /s³l/, as Zelliger stated.[468] This word has not yet been transcribed.

In the fourth row, the expression ꝹʬI3Γ is probably /imᵉsd ᵉɣt/, according to Zelliger.[469] In the expression [3]ↄꝹ0Γ ı ↄY /ɛn iʃtᵋnᵋ[m]/ 'my God' the personal pronoun /ɛn/ has a possessive attributive function.[470] Zelliger showed, that the transcription of the word being one grapheme long (ↄ) was /ɛn/ and not /en/ as it was supposed earlier.[471] The partly worn leftmost grapheme was reconstructed by archaeologist G. Vékony as ȝ OPEN M /m/.

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[461] Vékony 2002

[462] D. Mátai 2003b, p. 402

[463] Zelliger, Erzsébet 2010–2011: *Personal communication*

[464] Zsigri 2001

[465] Zelliger, Erzsébet 2010–2011: *Personal communication*

[466] Zelliger, Erzsébet 2010–2011: *Personal communication*

[467] D. Mátai 2003b, p. 411

[468] Zelliger, Erzsébet 2010–2011: *Personal communication*

[469] Zelliger, Erzsébet 2010–2011: *Personal communication*

[470] D. Mátai 1999, pp. 442–446

[471] Zelliger, Erzsébet 2010–2011: *Personal communication*

7.2.9. Golden Treasure of Nagyszentmiklós

The Golden Treasure of Nagyszentmiklós is a tableware collection of 23 gold pieces found in Nagyszentmiklós, Torontál County, Hungary (currently Sânnicolau Mare, Romania. See *Map 7.2-1* and *Image D-4*) in 3 July 1799 (*Fig. 7.2.9-1*).[472] The treasure is unique in the region; the total weight is 10 kg. Its style cannot be connected to any great cultural center; most probably, it is a local product.[473] When the value of the treasure was realized it was taken to the Imperial Collection of Curiosities in Vienna (at that time the king of Hungary was Franz II, the last Holy Roman Emperor seated in Vienna), where it has remained ever since.[474] Hampel was the first to examine the treasure comprehensively in 1884.[475] In 1984, archaeologist I. Bóna stated that the treasure is related to the Avars.[476] After decades of thorough examinations regarding aspects of its manufacture, archaeologist Cs. Bálint stated that the Treasure of Nagyszentmiklós could be dated back most probably to the 8th century.[477] However, the majority of the inscriptions were made later as demonstrated by Turkologist A. Róna-Tas.[478]

According to I. Erdélyi, the Nagyszentmiklós works of art show style elements from Central Asia. He demonstrated that this collection of vessels is not a complete set.[479] He dated the majority of the pieces of the collection to the 9th century, except drinking horn No. 17 (*Sec. 7.2.10*) that was dated to the 7th century.[480] Erdélyi also connected the whole treasure to the local ruler Ajtony (ruled ca. 955–1008/1028).[481] The location of finding the golden treasure was 10 kilometers from the former Marosvár Fortress (later called Csanádvár, see *Map 3.9-1*), which was the seat of ruler Ajtony (*App. B*).[482] In addition, it is notable that the Battle of Nagyősz (where Ajtony was defeated by the Hungarian Royal Army) was very close to Nagyszentmiklós (*Image D-4*). According to linguist L. Benkő, the origin of the name Ajtony is the Turkic /altun/ 'Golden' that changed in the Hungarian language /lt/>/xt/>/jt/.[483] In the early Hungarian chronicles, his name was written as *Achtum* (in the 12th century) and *Ohtun* (in the 1320s) showing its Old Hungarian pronunciation: /axtom/ or /axtum/. The /n/~/m/ alternation was definitely a Hungarian linguistic feature, proving that the name Ajtony was used in a Hungarian-speaking environment.[484]

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[472] Németh 1932a; Németh 1932b; Göbl & Róna-Tas 1995
[473] Bálint 2002
[474] Garam 2002a
[475] Hampel 1884, pp. 1–166, 1–2
[476] Bóna 1984a, 1984b
[477] Bálint 2004
[478] Róna-Tas 1996a
[479] Erdélyi & Pataki 1968, pp. 35–43
[480] Erdélyi 2005, p. 182
[481] Erdélyi 2005, p. 183
[482] Csallány 1967, p. 61
[483] Benkő, L. 2001, pp. 7–68
[484] Benkő, L. 2001, pp. 7–68

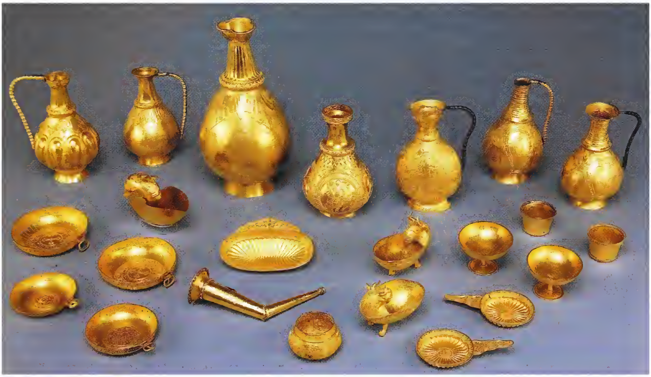

Figure 7.2.9-1: The complete collection of the Treasure of Nagyszentmiklós[485]

S. Trugly showed that the motifs of the golden treasure are strongly related to a late Avar cemetery at the site of the Ship Factory of Komárom (today Komarno, Slovakia) dating to the period from the mid-8th century to the first decades of the 9th century.[486]

According to Vékony, the names of the beverages to fill the jugs and the names of the foods to be served on the plates were carved onto the bottom of the pieces in Carpathian Basin Rovash script. That is why the rovash texts are mainly names of drinks and food. All of the inscriptions are in Hungarian (the majority) or Onogur (the minority). However, a few inscriptions have been carved in Slavic and As–Alan as well. This is in accordance with the fact that in the territory where the treasure was found, a predominantly Hungarian-speaking population lived in the 10th–11th centuries.[487] The rovash inscriptions on the Golden Treasure date to the 8th–11th centuries, except the Bowl No. 8, since the Rovash graphemes were embossed before bonding the flip. Therefore, this inscription was made in the 8th century. Oppositely, two inscriptions, which contain an early Slavic letter had to be made in the 10th-11th centuries. In this book, the sequence numbers of the inscription used by Göbl and Róna-Tas is used.[488]

A) Bowl No. 8

One of the most interesting pieces of the relic is the bowl in *Fig. 7.2.9-2*. It is clearly visible that before embossing the final inscription, a draft was scored first onto the surface (*Image D-2*). Since the embossed graphemes did not completely cover the scored draft, both remained visible (*Fig. 7.2.9-3*).

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[485] Kovács 2002, *cover page inside*

[486] Trugly 1984–1985, p. 259; 2008

[487] Benkő, L. 2002, p. 101

[488] Göbl & Róna-Tas 1995

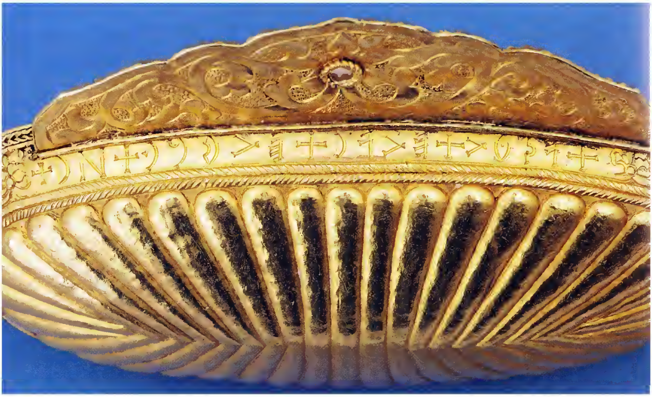

Figure 7.2.9-2: The photograph of the Bowl No. 8[489]

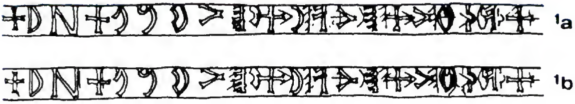

Figure 7.2.9-3: Two drawings of the No. *1* inscription of the Bowl No. 8.[490] Its rovash inscription is from the 8th century, since it was made before completing the bowl.

The transcription was originally made by Vékony and later modified by linguist E. Zelliger and the author of this book.[491] This sentence could be an Ancient Hungarian felicitation phrase.

Written with normalized Carpathian Basin Rovash font	+ DN + ↄↄ0>ǂ + Ↄ1>ǂ + >0ɜ1 +
IPA phonetic transcription	/βoʃᵘdᵘ ᵚzˠdβᵃɲ ᵚzᵃdᵃtni ᵉɣᵉi̯/
Translation from Hungarian	‘The fermented woshudu [drink] for him to warm up.’

Table 7.2.9-1: Transcription of Inscription *No. 1* of Nagyszentmiklós.

In the Hungarian language /β/ changed to /v/ or /b/ in the 12th–13th centuries.[492] The inscription was made much earlier; therefore, the right pronunciation of the first consonant is /β/. The

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[489] Kovács 2002, p. 26
[490] Hampel 1884, pp. 1–166, 1–2
[491] Vékony 1987a; Zelliger, Erzsébet 2010–2011: *Personal communication*
[492] E. Abaffy 2003b, p. 303

> SHARP D /d/ in the term >Ɵ⸾ᒣ represented the regular diminutive suffix existing in the Ancient Hungarian linguistic period.[493]

The first vowel of the word >Ɵ⸾ᒣ could be either /o/ or /u/. As Vékony demonstrated, this word was not only internationally used but even adopted by several languages. For instance, the inscription of the Novocherkassk Clay Flask in Turkic also contains this word written in Proto-Rovash: Ψʂᒣ /boʃᵃ/ (*Sec. 8.2.6*).[494] The Pre-Ossetic (As–Alan) inscription of the Stanitsa Krivyanskoe Clay Flask contains the As–Alan word ʂlʂᒣ /voʃu/ written in Proto-Rovash.[495] Linguist E. Zelliger pointed out that if the Turkic word /boʃᵃ/ had been adopted by the Hungarian language, it should have realized as /βoʃaː/ and in this case the long vowel /aː/ should have been written according to the *Rule 2* in *Table 3.1-6*. Therefore, more probably the As–Alan /voʃu/ was adapted by the Hungarian language. According to Zelliger, the transcription of the word >Ɵ⸾ᒣ is /βoʃᵘdᵘ/.[496]

The author found appearances of this drink name in present-day use in various languages. The background is that a large number of the Cumans (a Kypchak-type Turkic nation) moved to Hungary during the first half of the 13th century. Moreover, the Hungarian language adopted some Cumanian words. One of them is the *boza,* the name of a fermented alcoholic drink.[497] In Hungary, *boza* was historically known as a kind of beer. However, the Hungarian word *boza* is clearly a Cumanian loanword.[498] In the same way, the word *boza* is well known among the Turkic nations as well, as a fermented beverage. The *boza* is originally made of millet, and—as it is known—the Central Asian Turks invented it. In English, the word *bosa* was adopted from the Turkic *boza*. It is noteworthy that according to Csiky, the version /boʃa/ of the word *boza* is unknown in the present-day Turkic languages.[499] There is not any source for the Old Turkic version of this word; however, the known Middle Turkic sources give /boza/ or /buza/.[500] Nevertheless, in the Turkic language, the /ʃ/>/z/ change is unknown.[501]

Danka suggested another possible ancestor of the word /boʃa/; namely, the Old Turkic verb variants /boʃut-/ ‘to have somebody freed or something released’[502] and /boʃu-/ ‘to empty’.[503] Moreover, the Eastern Old Turkic word /boʃ/ means ‘empty’.[504] However, the etymology of /boʃa/ as name of a drink remained problematic.

In order to analyze the two words in the middle of the inscription, it is necessary to examine the genealogy of the Hungarian verb /izzik/. According to L. Benkő, it is probably Finno-Ugric in origin.[505] Its original meaning was ‘get warmed’, ‘warmth’. All Hungarian words relating to /izzik/ contain only back vowels. Therefore, in the inscription, the noun /ᵚzᵃdβᵃɲ/ could be something that *warms up due to fermentation*. Its translation is possibly: ‘fermented [drink]’. According to Vékony, the noun /ᵚzᵃdᵃtni/ was created with the /-ni/ allative suffix; it meant ‘to warm up’.[506] However, Zelliger pointed out that such a function of the /-ni/ allative suffix is unknown from other sources.[507]

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[493] Sárosi 2003, p. 142

[494] Vékony 2004a, p. 250

[495] Vékony 2004a, p. 257

[496] Zelliger, Erzsébet 2010–2011: *Personal communication*

[497] Zsilinszky 2003, p. 390; *http://mek.niif.hu/02700/02790/html/92.html*

[498] TLH 164-165, *boza* a.

[499] Csiky, Gergely 2013: *Personal communication*

[500] TLH 164-165, *boza* a.

[501] TLH 1097-1099; Danka, Balázs 2013: *Personal communication*

[502] Erdal 1999a: 767

[503] ED 377; TLH 133-136

[504] TLH 133

[505] TESz., Vol. 2, pp. 254–255

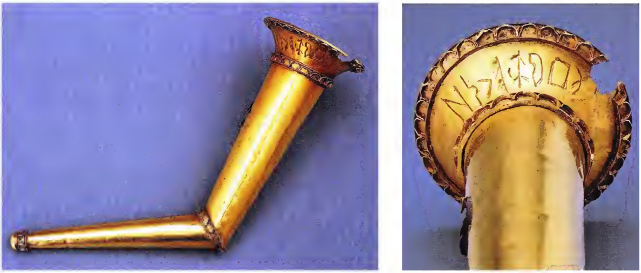
[506] Vékony 2004a, pp. 142–143

[507] Zelliger, Erzsébet 2010–2011: *Personal communication*

According to Zelliger, the transcription of the last word DN of the inscription to the left is /ᵉɣᵉi̯/ ‘his’.[508] Finally, the punctuation symbol + WORD SEPARATOR VETICAL CROSS may refer to Christianity. As Róna-Tas stated, the Hungarians had contacts with the Christianity from the 5th century.[509]

B) Drinking Horn No. 17

I. Erdélyi demonstrated that drinking horn *No. 17* is the oldest piece of the Treasure of Nagyszentmiklós dating to the 7th century.[510] Based on its topology, the ⩚ SHARP H could be a symmetric variant of ⩘ SHARP CH /x/. Its inscription was obviously made in the same date of some other inscriptions, e.g. see *Figure 7.2.9-6a) & b*.



a) *b)*

Figure 7.2.9-4a: The photograph of the whole *No. 17* Drinking Horn and *b)* its inscription *No. 2/3*[511]

Written with normalized Carpathian Basin Rovash font	N⸾>⋾ ı ⩚Ꝺ□⋺
IPA phonetic transcription	/yrᵋtx ᵚzˠdoɣ/
Translation from Hungarian	‘Emptying [of the drinking horn is] warming’

Table 7.2.9-2: Transcription of Inscription *No. 2/3* on the Drinking Horn of Nagyszentmiklós. The /yr-/ is a root-word, cf. /yriːtɛni/ ‘to drain,’ /yrɛʃ/ ‘empty,’ /yrylni/ ‘to empty,’ and /yrɛg/ ‘cavity’.[512] Vékony’s transcription was reviewed and improved by linguist E. Zelliger.[513]

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[508] Zelliger, Erzsébet 2010–2011: *Personal communication*

[509] Róna-Tas 1999b

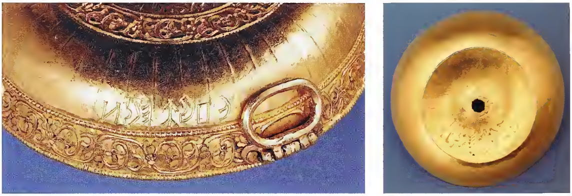
[510] Erdélyi 2004b, p. 165; 2005, p. 182

[511] Kovács 2002, p. 36

[512] TESz

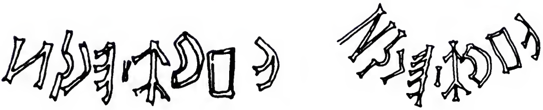
[513] Zelliger, Erzsébet 2010–2011: *Personal communication*

C) Bowl No. 10 and Cup No. 22



a) *b)*

Figure 7.2.9-5a) and *b)*: The photographs of the *No. 10* Bowl and the *No. 22* Cup[514]



a) *b)*

Figure 7.2.9-6a) and *b*: The inscriptions *No. 2/1* (left) and *No 2/4* (right) of the *No. 9* Bowl and the *No. 22* Cup, respectively[515]

The inscriptions in *Fig. 7.2.9-6a)* and *b)* match the texts in *Fig. 7.2.9-4a)*, therefore their transcription is presented in *Table 7.2.9-2*.

D) Bowl No. 9

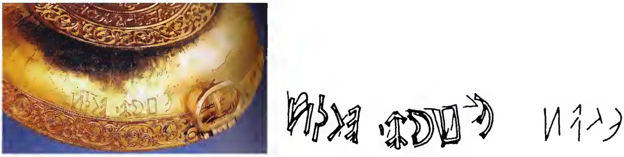


Figure 7.2.9-7: The photograph of the No. 9 Bowl and its inscriptions: *No.2/2* (left) and *No. 12* (right).[516]

The inscription denoted as *5a* in *Fig. 7.2.9-7* matches the text in *Fig. 7.2.9-4a*, see *Table 7.2.9-2*.

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[514] Kovács 2002, p. 30 & 43

[515] Németh 1932a, p. 67

[516] Kovács 2002, p. 28; Hampel 1884, pp. 1–166, 1–2

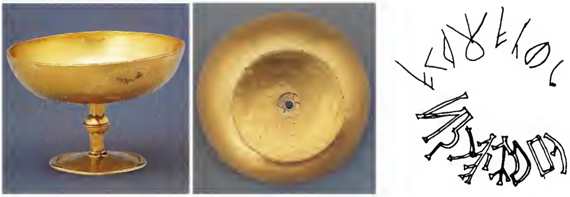
Written with normalized Carpathian Basin Rovash font	И1>∋
IPA phonetic transcription	/ydβ⁸ɣ/
Translation from Hungarian	‘Refreshing’

Table 7.2.9-3: Transcription of Inscription *No. 12*

И1>N /ydβ⁸ɣ/ is in reflexive form, where the root of the verb is /yd/ and /β/ is a reflexive affix. Its transcription was made by archaeologist G. Vékony and improved by linguist E. Zelliger.[517]

E) Cup No. 23

Two inscriptions (*Fig. 7.2.9-8* and *9*) contain the grapheme ጰ TRIPLE O /ɔ̃/, which originated from the Early Cyrillic script.



a) b) c)

Figure 7.2.9-8a, b and *c*: The photographs of *a)* the side and *b)* the bottom of the *No. 23* Cup and *c)* its inscriptions: *No. 3* (top row) and *No. 2/5* (bottom row)[518]

The meaning and the transcription of the text *No. 2/5* is identical to the Inscription *No. 2/2* (*Fig. 7.2.9-7*), the only one difference between the inscriptions is that the glyph ⱻ was used instead of ⱻ for representing /z/. The transcription of Inscription *No. 3* is presented in *Table 7.2.9-4*.

Written with normalized Carpathian Basin Rovash font	ϽOY1 ጰD>1
IPA phonetic transcription	/v°d°jɔ̃ vaʃĭ/ or /v°d°jɔ̃ vaʃe/
Translation from Slavic	‘[It should be] yours, with water!’ (The text is possibly related to Christianity.)

Table 7.2.9-4: Transcription of Inscription *No. 3* of Nagyszentmiklós. In the translation, the word “yours” is in plural. Professor-Slavist A. Zoltán revised the transcription.[519]

The adoption of the Cyrillic Ѫ YUS /ɔ̃/ into CBR as ጰ TRIPLE O /ɔ̃/ had to happen after 893/927, when the Cyrillic script was developed in the court of Simeon Bulgar Tsar (*App. B*).[520] Therefore, Inscription *No. 3* was surely created after this time. Consequently, this inscription had to be made in about the 10th-11th centuries. The name of the Ѫ YUS /ɔ̃/ was Onsь in the Old Church Slavic language. According to Slavist Prof. András Zoltán, the pronounciation of the ↄOY⅂ could be /vaʃe/ instead of /vaʃi/.[521] In this inscription, the ancestor glyph Φ of the CBR Ɵ CLOSED S /ʃ/ is identical to the SHR Φ US /ʃ/.

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[517] Vékony 2004a, p. 144; Zelliger, Erzsébet 2010–2011: *Personal communication*

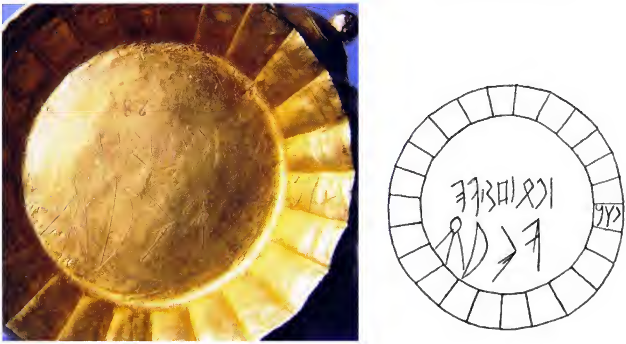
[518] Kovács 2002, p. 43; Hampel 1884, pp. 1–166, 1–2

[519] Zoltán 2012: 283-287; Zoltán, András 2012: *Personal communication*

[520] Róna-Tas 1996a, p. 338

F) Jug No. 6—a quadrilingual relic

The jug *No. 6* is a unique relic, since it contains four short inscriptions in different languages having similar meaning: 'water', 'with water', or 'water [and] beer/wine' (*Fig. 7.2.9-9a*). One of them was written in Ogur (surely Onogur), another in Hungarian, see *Table 7.2.9-5*. The Onogur ᛟↄI /sïu̯/ demonstrates that in this Ogur language the Chuvash-specific change /s/>/ʃ/ did not happen.



a) *b)*

Figure 7.2.9-9a: The photograph of the bottom of the *No. 6* Jug and *b)* the drawing of the inscriptions *No. 4*, *No. 5*, and *No. 6*[522]

Written with normalized Carpathian Basin Rovash font	∃⅂ ı ʒ□I ᛟↄI
IPA phonetic transcription	(1) /sïu̯ *sᶷrˈm/, (2) /βˈzˈ/
Translation from Ogur (probably Onogur, first expression) and Hungarian (second expression, one word)	(1) 'water [and] beer/wine', (2) 'water'

Table 7.2.9-5: Transcription of the *first row* in the inscription of Jug *No. 6* of Nagyszentmiklós[523]

Vékony suggested the reading /sʸrˈm/ 'filter' for the word ʒ□I. However, Danka proposed a semantically better transcription: the Eastern Old Turkic /sᵒrmᵃ/ 'beer, wine, alcoholic drink'[524] or its reconstructed Western Old Turkic variant */sᵒrˈm/.[525]

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[521] Zoltán, András 2012: *Personal communication*
[522] Kovács 2002, p. 22; Hampel 1884, pp. 1–166, 1–2
[523] Vékony 2004a, pp. 137–138
[524] ED 852
[525] Danka, Balázs 2013: *Personal communication*

The Hungarian ƺ˥ /βⁱzⁱ/ ‘water’ has /i/ at the end, since in the Ancient Hungarian linguistic period the clear majority of the Hungarian words ended with a vowel.[526] According to Zelliger, both vowels in the word ƺ˥ /βⁱzⁱ/ are short.[527] This statement is in accordance with the fact that these vowels were not written in the inscription (*Table 3.1-6, Rule 2*).

Written with normalized Carpathian Basin Rovash font	ꝈD>˥
IPA phonetic transcription	/v°d°jɔ̃/
Translation from Slavic	‘with water’

Table 7.2.9-6: Transcription of *second row* in the inscription of Jug *No. 6* of Nagyszentmiklós.

The date of the Inscription *No. 8* must be after 893/927, after the creation of the Cyrillic alphabet.[528] Consequently, this inscription had to be made in about the 10th-11th centuries.

Written with normalized Carpathian Basin Rovash font	ᑐY>
IPA phonetic transcription	/dan⁽ᵘ⁾/
Translation from As or Alan	‘water’

Table 7.2.9-7: Transcription of the text *in the sidewall frame* of Jug *No. 6* of Nagyszentmiklós

The quadrilingual inscription on the Jug *No. 6* demonstrates that Hungarian, Turkic (Onogur), As–Alan, and Slavic-speaking people lived here together. This is in accordance with the research conclusions of Róna-Tas that the land-acquiring Magyars found Turkic-speaking people in the Carpathian Basin.[529] Note that E. Fóthi proved that there were Sarmata (Alan-speaking) groups in the Carpathian Basin in the late Avar period, among others near the current Ártánd Village (Hungary), which is 200 km away from Nagyszentmiklós.[530] It is noteworthy that this fact does not imply that the survived Sarmata groups really used their original language.[531]

G) Jugs No. 3 and No. 4

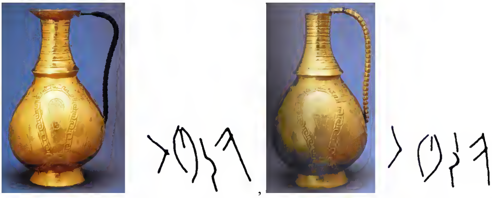

Figure 7.2.9-10: The photographs of the *No. 3* (left) and *No. 4* (right) jugs and their inscriptions *No. 7/1* (left) and *No. 7/2* (right)[532]

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[526] E. Abaffy 2003a, p. 124;

[527] Zelliger, Erzsébet 2010–2011: *Personal communication*

[528] Róna-Tas 1996a, p. 338

[529] Róna-Tas 1995, p. 274; Róna-Tas 2001, p. 13

[530] Fóthi 1984–85, p. 488

[531] Csiky, Gergely 2013: *Personal communication*

[532] Hampel 1884, pp. 1–166, 1–2; Kovács 2002:19-20

Written with normalized Carpathian Basin Rovash font	>ʘ}ᖷ
IPA phonetic transcription	/βoʃᵘdᵘ/
Translation from Hungarian	‘Woshudu’ (name of a fermented alcoholic drink)

Table 7.2.9-8: Transcription of inscriptions *No. 7/1* and *7/2* of Nagyszentmiklós

H) Flat-shallow ladles No. 15 and No. 16

As archaeologist Gy. László discovered, these ladles were not used for drinking but for eating some delicacy.[533] It was transcribed by Vékony[534] and his result was improved upon by Zelliger.[535] The word /βᵃdᵘ/ still exists in present-day Hungarian; its current form is *vad* /vɒd/ ‘wild, not-cultivated, woodsy’. Since the ladles are very small, they might be for fruits like forest berries.

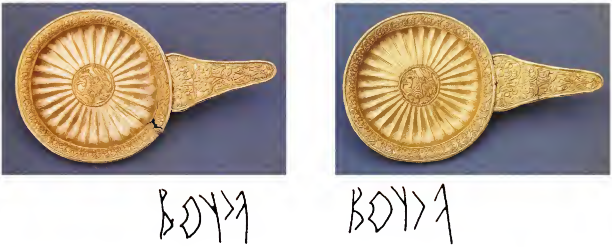

Figure 7.2.9-11: The photographs of the *No. 15* (left) and *16* (right) flat-shallow ladles and their inscriptions *8/1* (left) and *8/2* (right)[536]

Written with normalized Carpathian Basin Rovash font	ᛒϑY>ᖷ
IPA phonetic transcription	/βᵃdᵘ etᵉkʲ/
Written in current Hungarian	*vad étek*
Translation from Hungarian	‘forest food’ (=fruit)

Table 7.2.9-9: Transcription of inscriptions *No. 8/1* and *8/2* of Nagyszentmiklós

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[533] László & Rácz 1977, pp. 174–176

[534] Vékony 2004a, pp. 148–149

[535] Zelliger, Erzsébet 2010–2011: *Personal communication*

[536] Hampel 1884, pp. 1–166, 1–2;Kovács 2002:34-35

I) Jug No. 5—a bilingual relic

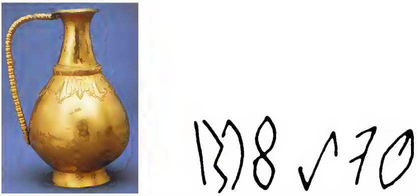

Figure 7.2.9-12: The photograph of the *No. 5* Jug and its inscriptions *No. 9* (left) and *10* (right)[537]

Written with normalized Carpathian Basin Rovash font	Iʒↄ8
IPA phonetic transcription	/qïmˈs/
Translation from Ogur (probable Onogur)	‘Kumis’

Table 7.2.9-10: Transcription of Inscription *No. 9* of Nagyszentmiklós

The Turkic word /qïmïz/ appears here as /qïmïs/, which has a slightly sour flavor with a bite from the mild alcoholic content.[538]

Written with normalized Carpathian Basin Rovash font	N7Φ
IPA phonetic transcription	/ʃᵃβᵒɣ/
Translation from Hungarian	‘Whey’

Table 7.2.9-11: Transcription of Inscription *No. 10* of Nagyszentmiklós

The root of the Hungarian word /ʃᵃβᵒɣ/ is ‘acid, sour’ acid’. The types of the whey are the sweet whey and the acid whey, the latter is also called as sour whey.

J) Cup No. 11

The inscription of *Fig. 7.2.9-13* contains only two graphemes. The transcription was made by Vékony as /ˈsïq/.[539]

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[537] Hampel 1884, pp. 1–166, 1–2; Kovács 2002:21

[538] Róna-Tas 1982b

[539] Vékony 2004a, pp. 148–149

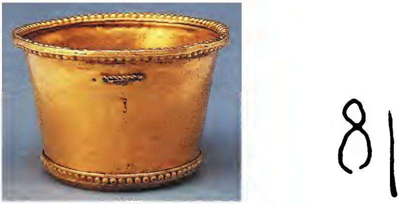

Figure 7.2.9-13: The photograph of the *No. 11* Cup and its inscription (*No. 11*)[540]

Written with normalized Carpathian Basin Rovash font	8l
IPA phonetic transcription	/ˈsˈq/
Translation from Ogur (probable Onogur)	‘Warm up!’

Table 7.2.9-12: Transcription of Inscription *No. 11* of Nagyszentmiklós

K) Inscription No. 13

A new symbol was found during the investigations of the Treasure of Nagyszentmiklós at the end of the 20th century (*Fig. 7.2.9-14*).[541] As the author of this book realized, this symbol is an upside-down image of the CBR ⅄ SHARP CH /x/. Its transcription could be /^{a}x/ or /^{o}x/, which could by originated from the /^{a}q/ ‘white’ or /^{o}q/ ‘arrow’, because of the well-known /q/>/x/ transition.[542] It means ‘white’ or ‘arrow’. In this case, the transcription /^{a}x/ ‘white’ is semantically more probable than the meaning ‘arrow’.

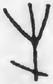

Figure 7.2.9-14: The drawing of the Inscription *No. 13* of Nagyszentmiklós on the mouthpiece of the *No. 17* Drinking Horn. This inscription can be older than the other inscriptions, since the Drinking Horn was made in the 7th century.

7.2.10. Pot Fragment of Torja

The inscription ↃIA on a pot fragment from Torja is dated to the 11th century (Szekelyland, Romania, see *Map 7.2-1* and *Image D-4*);[543] see *Fig. 7.2.10-1*. Torja Village already existed in the 10th–11th centuries. According to J. Ráduly, its transcription is /k^{aː}son/, marking the name of the *Kászon* /kaːson/ region.[544] Torja Village is not far from the Kászon Brook and a small village called *Kiskászon* ‘Little Kászon’.

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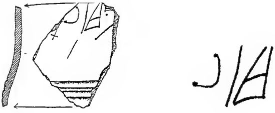
[540] Hampel 1884, pp. 1–166, 1–2

[541] Róna-Tas 1996a, p. 114

[542] Tenishev 1984, p. 193; Róna-Tas 1971, p. 392; Róna-Tas 1979

[543] Székely 1996

[544] Ráduly 1999; 2008b, p. 12



a) b)

Figure 7.2.10-1: The Torja Inscription, 11th century, a) drawing of Z. Székely and *b)* of J. Ráduly[545]

The earliest source of the name /kaːson/ is from 1332–1334, found in the personal name "*Nycolaus de Kazun*".[546] This name was written in the Old Hungarian orthography, which used *z* for representing the /s/ as well as the /z/ sound.[547] The name "*Kazun*" in the source shows an archaic form before the change /u/>/o/ occurred. The tendency "*becoming more open*" (e.g., /u/>/o/) in the Hungarian language occurred between the 11th and 14th centuries.[548] Based on this, the author modified the transcription to /$k^{a}s^{u}n$/, since the rovash inscription was made earlier than the Latin "*Nycolaus de Kazun*". Linguist E. Friczné Terbe supports this concept.[549]

This inscription is unrelated to the Szekelys who settled down in that region between the end of the 12th and 13th centuries.[550] The Torja Relic is especially important, since it proves that CBR was in use even in the 11th century.

7.2.11. Bone cover of a bow from Békés-Povádzug

There is a magical inscription on a bone cover of a bow discovered in grave *No. 45* in the Békés-Povádzug archaeological site (Hungary, see *Map 7.2-1* and *Fig. 7.2.11-1*).[551] Szenthe dated the relic to the period between the second half of the 11th century and the beginning of the 12th century.[552] It is noteworthy that according to Szenthe, the nationality of owner of the rovash relic cannot be identified based on our present knowledge. The analysis of the inscription revealed similarities to the Carpathian Basin Rovash ligature of Környe (*Sec. 7.2.1* and *Table 7.2.1-2*).

Vékony transcribed it as /^{u}x/, which was later improved by Vásáry and Danka.[553] According to Danka, the word /^{o}x/ does not imply that the inscription is obviously Ogur.

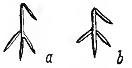


Figure 7.2.11-1: Two inscriptions of the Bow from Békés-Povádzug, 11th-12th c.

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[545] Székely 1996, pp. 171–174; Ráduly 2008b, p. 12

[546] Mihály 2008, p. 22

[547] Korompay 2003b, pp. 284–286

[548] E. Abaffy 2003b, pp. 329–330

[549] Friczné Terbe, Erika 2010–2011: *Personal communication*

[550] Székely 1996, pp. 171–174

[551] Dienes 1962, p. 96, *Fig. 36*

[552] Szenthe, Gergely 2012: *Personal communication*

[553] Vásáry, István 2010–2011: *Personal communication*; Danka, Balázs 2013: *Personal communication*

Written with normalized Carpathian Basin Rovash font	𐲔
IPA phonetic transcription	/ᵒx/
Translation from Turkic	‘arrow’

Table 7.2.11-1: Transcription of inscriptions of Békés-Povádzug

8. The Steppean Rovash

8.1. *Description of the orthography*

8.1.1. General properties

Steppean Rovash is directed exclusively from right to left; there is no casing and no numerals in any of the known Steppean Rovash relics. In some cases, borrowing graphemes from other scripts led to the multiplication of SR graphemes (*Sec. 3.5.2*). Sporadically and not consequently, SR applied vowel harmony in the case of some consonants.

8.1.2. Steppean Rovash letters

Table 8.1.2-1 details the grapheme repertoire of the Steppean Rovash. The number of occurrences of each glyph in each relic is given in brackets at the end of the rows. In the first column, the glyphs of the normalized Steppean Rovash graphemes are listed.

Glyph	**Name**	**IPA symbol**	**Examples of the Steppean Rovash glyph in relics**
Y	FORKED A	/a/ɛ/	Ermen Tolga, *Sec. 8.2.8*, in Khazar, *sound*: /a/ɛ/ (6) Mayatskoe Gorodishche Large, *Sec. 8.2.5*, in Khazar, *in lig.*, *sound*: /a/ (3) Mayatskoe Gorodishche No. 1 & 5, 9th c., *Fig. 8.2.6-1,5a*, in Khazar, *partly in ligature*, *sound*: /a/ (2) Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan, *in ligature*, *sound*: /a/ (1)
ᐳ	ANGLED B	/b/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (3) Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (2) Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar (1) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (8) Mayatskoe Gorodishche No. 1 & 5, 9th c., *Fig. 8.2.6-1,5a,b*, in Khazar (2)
Ↄ	ARCHED B	/b/β/	Jitkov, Bow Cover, 8th c., *Sec. 8.2.1*, in Khazar, *sound:* /b/ (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *sound:* /β/ (1)
♈	RAISED B	/b/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (4) Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan, *in lig.* (1) Khumara, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
N	CS	/t͡ʃ/s/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic, *sound:* /s/, (4) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *sound:* /t͡ʃ/, (1) Khumara, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *in ligature,* (1)

Glyph	**Name**	**IPA symbol**	**Examples of the Steppean Rovash glyph in relics**
∩	ARCHED D	/d/ð/d͡ʒ/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar, *sound:* /d͡ʒ/ (2) Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic (1) Khumara, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *sound:* /d/, *in lig.* (1) Khumara, *Fig. 8.2.4-2b,3b*, in Ogur, *sound:* /d/d͡ʒ/ (3) Ermen Tolga, in Khazar, *sound:* /d/ð/, *partly in ligature* (6) Mayatskoe Gorodishche Large, in Khazar, *partly in ligature* (8) Mayatskoe Gorodishche No. 1, *Fig. 8.2.6-1*, in Khazar, *in ligature* (1) Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan (1)
>	SHARP D	/ð/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (3) Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (7) Devitsa Coins, 8th–9th c., *Sec. 8.2.2*, in Khazar, *in ligature* (2) Khumara, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *sound:* /d͡ʒ/ (1) Khumara, ca. 9th–10th c., *Fig. 8.2.4-2b,3b*, in Ogur (4) Khumara, ca. 9th–10th c., *Fig. 8.2.4-4*, in Khazar (1) Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar, *in ligature* (1) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (6) Mayatskoe Gorodishche No. 1, 9th c., *Fig. 8.2.6-1*, in Khazar (1) Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar (1)
ɜ	TRIPLE E	/ɛ/e/	Khumara, 9th–10th c., *Fig. 8.2.4-3b*, in Ogur, *sound* /e/ (1) Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar, *sound* /e/ (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *sound* /ɛ/, *glyph:* ɜ (2)
M	ANGLED E	/ɛ/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (2)
)	ARCHED E	/a/aː/ɛ/	Jitkov, 8th c., *Sec. 8.2.1*, in Khazar, *glyph:* ƅ, *sound*: /a/aː/ɛ/ (5) Khumara, *Fig. 8.2.4-2b,3b*, in Ogur, *partly in ligature*, *sound*: /a/ (3) Khumara, *Fig. 8.2.4-4*, in Khazar, *sound*: /a/ (1)
ⵣ	CLOSED E	/e/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (1)
λ	FORKED G	/g/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
Ȣ	CLOSED G	/g/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic, *sound:* /g/ (1) Khumara, 9th–10th c., *Fig. 8.2.4-2b, 3b* in Ogur *sound:* /g/ (3) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar, *sound:* /g/ (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *sound:* /g/ (6)
N	GH	/ɣ/	Jitkov, 8th c., *Sec. 8.2.1*, in Khazar: ᛋ (3) Achik-Tash, *Sec. 8.2.3*, in Turkic, *glyph:* ᛋ (1) Khumara, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *mirrored, glyph:* ᛋ, *sound:* /ɣ/ (1) Khumara, *Fig. 8.2.4-3b*, in Ogur, *mirrored:* И (2) Khumara, *Fig. 8.2.4-4*, in Khazar, *mirrored:* И (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2) Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar (1)

Glyph	Name	IPA symbol	Examples of the Steppean Rovash glyph in relics
>	FORKED CH	/x/	Jitkov, Bow Cover, 8th c., *Sec. 8.2.1*, in Khazar, *glyph:* ŋ (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (1)
⅄	SHARP CH	/h/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic, *sound:* /h/ (4)
1	ANGLED I	/i/, *in ligature also* /e/	Jitkov, *Sec. 8.2.1*, in Khazar, *mirrored glyph:* Γ (1) Mayatskoe Gorodishche Large, *Sec. 8.2.5*, in Khazar, *in lig.*, *sound:* /e/ (1) Mayatskoe Gorodishche No. 4, *Fig. 8.2.6-4*, in As–Alan, *in lig.* (1) Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *in lig., mirrored glyph:* Γ (1) Ermen Tolga, *Sec. 8.2.8*, in Khazar, *in ligature*, *sound:* /e/ (3) Kievan Letter, *Sec. 8.2.9*, in Khazar *in lig., mirrored:* Γ (2)
Ↄ	ARCHED I	/i/i/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (4) Khumara, *Fig. 8.2.4-3b*, in Ogur (1) Khumara, *Fig. 8.2.4-4*, in Khazar, *in ligature* (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (4) Mayatskoe Gorodishche No. 5, *Fig. 8.2.6-5a,b*, in Khazar, *glyph:* Ↄ (1)
ᑫ	CIRCLE ENDED I	/i/i/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1) Khumara, 9th–10th c., *Fig. 8.2.4-2b*, in Ogur (1) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (1)
D	CLOSED J	/j/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (1) Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (1) Khumara, 9th–10th c., *Fig. 8.2.4-3b*, in Ogur, *glyph:* O (1) Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar, *glyph:* O (1) Mayatskoe Gorodishche No. 1, 9th c., *Fig. 8.2.6-1*, in Khazar (1) Mayatskoe Gorodishche No. 4, 9th c., *Fig. 8.2.6-4*, in As–Alan, *in lig.* (1)
>	FORKED K	/k/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar, *in ligature* (1) Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar (1) Mayatskoe Gorodishche No. 4, 9th c., *Fig. 8.2.6-4*, in As–Alan (1) Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar (1)
Ч	ARCHED L	/l/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
)	SIMPLE L	/l/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2) Kievan letter, 955–961, *Sec. 8.2.9*, in Khazar *in lig.* (1)
M	LT	/lt/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2)

Glyph	Name	IPA symbol	Examples of the Steppean Rovash glyph in relics
	OPEN M	/m/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (2) Khumara, 9th–10th c., *Fig. 8.2.4-3b*, in Ogur (2) Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar (2) Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar (1) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar, *mirrored:* (4) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2) Mayatskoe Gorodishche No. 17, *Fig 8.2.6-2,* undeciphered (1) Mayatskoe Gorodishche No. 4, *Fig. 8.2.6-4*, in As–Alan, *mirrored:* (2)
	N	/n/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (1) Khumara, 9th–10th c., *Fig. 8.2.4-3b*, in Ogur (2) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *partly in lig.* (5) Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan, *in lig.* (1)
	ANGLED N	/n/	Khumara, *Fig. 8.2.4-2b,3b*, in Ogur (3) Khumara, *Fig. 8.2.4-4*, in Khazar (2) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2)
	FORKED N	/n/	Achik-Tash, *Sec. 8.2.3*, in Turkic (2) Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar, *partly in ligature* (2) Mayatskoe Gorodishche No. 1 & 5, 9th c., *Fig. 8.2.6-1,5a,b*, in Khazar (2) Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan (1)
	NG	/ŋ/	Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2)
	FORKED O	/o/u/	Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar (1) Mayatskoe Gorodishche Large, *Sec. 8.2.5*, in Khazar, *partly in ligatures, glyphs:* , (4) Mayatskoe Gorodishche No. 5, *Fig. 8.2.6-5a,b*, in Khazar, *in lig.* (1) Kievan letter, 955–961, *Sec. 8.2.9*, in Khazar (1)
	FORKED P	/p/	Achik-Tash, *Sec. 8.2.3*, in Turkic (1)
	SIMPLE P	/p/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (2) Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
	ANGLED Q	/q/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic (2)
	ARCHED Q	/q/	Mayatskoe Gorodishche No. 1, 9th c., *Fig. 8.2.6-1*, in Khazar (1)
	CLOSED Q	/q/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (1) Mayatskoe Gorodishche No. 5, *Fig. 8.2.6-5a,b*, in Khazar, *glyph:* (1) Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar, *in ligature* (1)
	OPEN Q	/q/	Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (5)
	SHARP R	/r/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2)
	ARCHED R	/r/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic (5)

Glyph	Name	IPA symbol	Examples of the Steppean Rovash glyph in relics
▯	CLOSED R	/r/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (1) Achik-Tash, first half of the 8th c., *Sec. 8.2.3*, in Turkic (1) Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1) Khumara, 9th–10th c., *Fig. 8.2.4-2b,3b*, in Ogur (2)
D	ARCHED SH	/ʃ/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (1)
Y	ZS	/ʃ/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (1) Devitsa Coins, 8th–9th c., *Sec. 8.2.2*, in Khazar, *in ligature* (2) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (4)
|	SZ	/s/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (2) Mayatskoe Gorodishche No. 4, 9th c., *Fig. 8.2.6-4*, in As–Alan (1) Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
ϒ	FORKED SZ	/s/	Khumara, *Fig. 8.2.4-3b*, in Ogur, *simpler shape* (1) Khumara, *Fig. 8.2.4-4*, in Khazar, *simpler shape* (1) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (1)
ɜ	ARCHED T	/t/	Khumara, 9th–10th c., *Fig. 8.2.4-2b*, in Ogur (1)
λ	FORKED T	/*t/	Mayatskoe Gorodishche No. 17, *Fig 8.2.6-2,* undeciphered (1)
X	OPEN T	/t/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic (8) Khumara, 9th–10th c., *Fig. 8.2.4-2b,3b*, in Ogur (4) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *glyph:* ϒ (1)
ϗ	SHARP T	/*t/z/	Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar (1), *sound:* /z/
⧖	CENTRAL T	/t/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (1)
ʔ	ARCHED UE	/ø/y/	Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar, *partly in lig.* (2) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Ogur, *glyph:* ʖ (7) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar, *glyph:* ʖ (2)
M	SHARP UE	/ø/*y/	Khumara, 9th–10th c., *Fig. 8.2.4-2b, 3b* in Ogur, *sound:* /ø/ (2)
ɿ	OPEN V	/β/, *in Common Turkic at the beginning of the word:* /b-/	Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar (1) Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar (2) Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar (1)

Table 8.1.2-1: SR graphemes and examples of each glyph in relics

In Steppean Rovash relics, the ɿ OPEN V denoted /β/b-/. In current Turkic languages, /β/ also exists. For instance, in the Latin-based Turkish orthography, the grapheme *v* represents /β/ in some cases.[554]

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[554] Gökser & Kerlake 2005, pp. 6–7

8.1.3. Punctuation

Punctuation marks exist in Steppean Rovash (*Table 8.1.3-1*).

Glyph	Name of the SR grapheme	Examples of the glyph in relics
•	WORD SEPARATOR MIDDLE DOT	Khumara, 9th–10th c., *Fig. 8.2.4-2b*, in Ogur
:	COLON	Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar
ǀ	WORD SEPARATOR VERTICAL BAR	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur (2) Khumara, 9th–10th c., *Fig. 8.2.4-2b*, in Ogur
▤	ROVASH SEPARATOR LARGE	Ermen Tolga, 8th–10th c., *Sec. 8.2.8*, in Khazar Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar

Table 8.1.3-1: Steppean Rovash separators and examples of each glyph in relics

8.1.4. Harmonization of consonants with vowels

The Steppean Rovash consonants are occasionally harmonized with the vowels of their syllables (*Table 8.1.4-1*). As opposed to the Old Turkic consonants,[555] and the Early Steppean Rovash consonants (*Table 6.1.3-1*), this harmonization is not coherent. A consonant is called *velar* if it is used near back vowels, and it is called *palatal* if it is used near front vowels. The back (velar) and front (palatal) vowels are listed in *Table A-1*. In some cases, the Steppean Rovash graphemes of the velar–palatal consonant pairs were even exchanged, which is a unique feature of the Steppean Rovash.

Harmonized with back vowels (called *velar consonants*)	Harmonized with front vowels (called *palatal consonants*)	Examples
Ͻ ARCHED B /b/β/	⋗ ANGLED B /b/, ᛉ RAISED B /b/	Jitkov, 8th c., *Sec. 8.2.1*, in Khazar Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar
∩ ARCHED D /d/d͡ʒ/	> SHARP D /ð/	Jitkov, 8th c., *Sec. 8.2.1*, in Khazar Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar
Ԋ, N GH /ɣ/	∂ CLOSED G /g/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar
) N /n/	ᔐ ANGLED N /n/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur Khumara, ca. 9th c., *Fig. 8.2.4-3b*, in Ogur Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar
ᔦ FORKED N /n/	ᔐ ANGLED N /n/	Khumara, ca. 9th c., *Fig. 8.2.4-4*, in Khazar
▯ CLOSED R /r/	∩ ARCHED R /r/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic

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[555] Vékony 2004a, p. 193

Harmonized with back vowels (called *velar consonants*)	**Harmonized with front vowels (called *palatal consonants*)**	**Examples**
X OPEN T /t/	∂ ARCHED T /t/	Khumara, ca. 9th c., *Fig. 8.2.4-2b*, in Ogur
X OPEN T /t/	X OPEN T /t/	Khumara, ca. 9th c., *Fig. 8.2.4-3b*, in Ogur
(*There is no occurrence in relics*)	ϒ, X OPEN T /t/	Achik-Tash, *Fig. 8.2.3-1*, in Turkic Mayatskoe Gorodishche Large, *Fig. 8.2.5-2*, in Khazar

Table 8.1.4-1: Examples of the consonants being harmonized and not harmonized with the vowels of their syllables

8.1.5. Ligatures

In Steppean Rovash, ligatures were frequently used. They are only stylistic, like in Carpathian Basin Rovash (*Sec. 7.1.5*). However, two ligatures are systematic and used regularly (*Table 8.1.5-1*): Ѧ DA and Ꭿ DI. About the /e/ sound value of the grapheme 1 ANGLED I in the ligature Ꭿ DI, see *Sect. 5.1.5.*

Glyph	**Name**	**Transcription**	**Constituents**	**Examples of the glyph in relics**
Ѧ	DA	/da/	∩ ARCHED D /d/ + Y FORKED A /a/	Mayatskoe Gorodishche Large, *Sec. 8.2.5*, in Khazar, *sound:* /da/ Mayatskoe Gorodishche No. 1, *Fig. 8.2.6-1*, in Khazar, /da/
Ꭿ	DI	/de/di/	∩ ARCHED D /d/ + 1 ANGLED I /i/e/	Ermen Tolga, *Sec. 8.2.8*, in Khazar, *sound:* /de/ Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur, *sound:* /di/ Mayatskoe Gorodishche Large, *Sec. 8.2.5*, in Khazar, *sound:* /de/

Table 8.1.5-1: The systematic Steppean Rovash ligatures

Table 8.1.5-2 presents the non-systematic Steppean Rovash ligatures applied on occasion.

Glyph	**Name**	**Transcription**	**Constituents**	**Examples of the glyph in relics**
ɜ	AN	/an/	ɿ ARCHED E /a/ + Ɔ N /n/	Khumara, 9th–10th c., *Fig. 8.2.4-4*, in Khazar
ʕ	BAN	/ban/	Ÿ RAISED B /b/ + Y FORKED A /a/ + Ɔ N /n/	Mayatskoe Gorodishche No. 3, 9th c., *Fig. 8.2.6-3*, in As–Alan
▤	CSI	/t͡ʃi/	₦ CS /t͡ʃ/ + 1 ANGLED I /i/	Khumara one line fragmentary inscription, 9th–10th c., *Fig. 8.2.4-1*, in Ogur
⇒	DKE	/ðkɛ/	> SHARP D /ð/ + ⋟ FORKED K /k/ + ɿ ARCHED E /ɛ/	Jitkov, first third of 8th c., *Sec. 8.2.1*, in Khazar

Glyph	Name	Transcription	Constituents	Examples of the glyph in relics
	IL	/il/	ANGLED I /i/ (*mirrored glyph*) + SIMPLE L /l/	Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar
	IN	/ïn/	ARCHED I /ï/ + FORKED N /n/	Khumara, ca. 9th c., *Sec. 8.2.4*, in Khazar
	IQ	/ïq/	ANGLED I /i/ (*mirrored glyph*) + CLOSED Q /q/	Kievan Letter, 955–961, *Sec. 8.2.9*, in Khazar
	JI	/ji/	CLOSED J /j/ + ANGLED I /i/ (*mirrored glyph*)	Mayatskoe Gorodishche No. 4, 9th c., *Fig. 8.2.6-4*, in As–Alan
	ISHAD	/^{i}ʃ^{a}ð/	ZS /ʃ/ + SHARP D /ð/	Devitsa Coins, 8th–9th c., *Sec. 8.2.2*, in Khazar
	NU	/nu/	FORKED N /n/ + FORKED O /u/	Mayatskoe Gorodishche No. 5, 9th c., *Fig. 8.2.6-5a,b*, in Khazar *See also Sec. 5.1.5.*
	ON	/on/	FORKED O /u/ + N /n/	Mayatskoe Gorodishche Large, 9th c., *Sec. 8.2.5*, in Khazar
	RAT	/rat/	CLOSED R /r/ + ARCHED E /ɛ/ + OPEN T /t/	Khumara, ca. 9th c., *Sec. 8.2.4*, in Khazar
	SI	/sï/	SZ /s/ + ANGLED I /ï/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic
	SHID	/ʃið/	ZS /ʃ/ + ANGLED I /i/ + SHARP D /ð/	Achik-Tash, 8th c., *Sec. 8.2.3*, in Turkic
	TEGH	/t^{e}ɣ/	OPEN T /t/ + GH /ɣ/	Khumara, ca. 9th c., *Sec. 8.2.4*, in Khazar
	UED	/øð/	ARCHED UE /ø/ + SHARP D /ð/	Bilingual Khazar Coin, *Sec. 8.2.7*, in Khazar

Table 8.1.5-2: The non-systematic Steppean Rovash ligatures found in the relics

8.2. *Steppean Rovash relics*

Map 5.2-1 presents the locations of the Steppean Rovash archaeological finds in Eurasia. Most of the Steppean Rovash relics were found in the territory of the late Khazar Khaganate, north of the Caucasus.

8.2.1. Bow Cover of Jitkov

In 1986, Y.I. Bespalyi found a horn cover for a bow with a rovash inscription in burial No. 1 of kurgan No. 4 on the field Jitkov II in the Rostov region (Rostovskaya oblast).[556] The relic is dated by some coin finds. Among them, there is a dirham from Nahr Tira dated to 716–717, and a solidus of Leo III (who ruled in 717–720). These coins date the burial to the first third of the 8th century.[557]

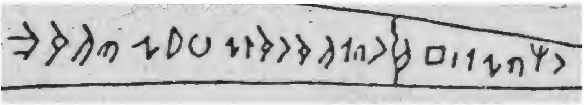

Figure 8.2.1-1: The inscription on the bow cover found at Jitkov, first third of the 8th century[558]

Written with normalized Steppean Rovash font	⇒⋗ ⅄> ՂDU ՂՐ⋗ >⋗ ⅄Ղ∩ ⊃⅄□ǀ7 Ղ∩ Ұ>
IPA phonetic transcription	/ˈðˈʃ d͡ʒᵃɣ ᵃpsᵃraːn d͡ʒᵃpa bˈð ᵋbiɣ bᵃjˈɣ ᵒx a bˈðkɛ/
Translation from Common Turkic (Khazar)	‘We send Apsar Jap [the] bow. Shoot a mansion, wealth, oh to us!’

Table 8.2.1-1: Transcription of the Jitkov Inscription, first third of the 8th century

The ligature ⇒ DKE /ðkɛ/ is composed of the followings: > SHARP D /ð/ + ⋗ FORKED K /k/ + ⅄ ARCHED E /ɛ/.

8.2.2. The Devitsa Coins

In 1939, the Devitsa (also called Devica) treasure was found near the Don River. It contains 237 coins. According to Bykov, these coins are Khazar products,[559] and their origin is between 754 and 811/812.[560] This opinion is supported by scholars, especially Ludwig[561] and Bálint.[562]

On several coins, the same ligature can be observed (*Table 8.2.2-1*).[563] It means *Ishad* /iʃað/, the alternate name of the vice-king *Ilik* of the Khazar Khaganate.[564] This inscription authenticated the coins. According to Golden, *Ishad* is a version of an Iranian dignitary name.[565] Based on these finds, the word *Ishad* was used in the 8th – early 9th centuries. The dignitary name *Ilik* was used later, in the 10th century. Besides *Ishad* and *Ilik*, there was a third name of the vice-king, namely /bɛk/; its other form was /beg/.[566]

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[556] Semenov 1988, p. 109
[557] TürkicWorld, website
[558] Semenov 1988, p. 108
[559] Bykov 1971, pp. 26–35
[560] Bykov 1971, pp. 65–66
[561] Ludwig 1982, p. 274
[562] Bálint 1980, p. 384; Bálint 1981, p. 410
[563] Shake 2000, p. 35; Kovalev 2004, p. 113
[564] Vékony 1997a, p. 28
[565] Golden 1980, pp. 206–208
[566] Golb & Pritsak 1982

Ligature on the Devitsa Coins (*glyph variations*)	
The elements of the ligature written with normalized Steppean Rovash font	
IPA phonetic transcription	/ˈʃᵃð/
Translation from Common Turkic (Khazar)	'Ishad'

Table 8.2.2-1: The ligature of the Devitsa Coins from the 8th–9th centuries and its transcription

8.2.3. The Achik-Tash Inscription from the Talas Valley in Turkic

Fig. 8.2.3-1 presents the Achik-Tash Inscription (meaning in Turkic: 'Open Stone', other names: Achik-Tash, Wooden Stick of Talas) from the first half of the 8th century.

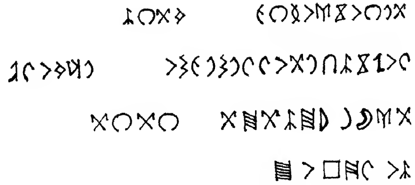

Figure 8.2.3-1: The Achik-Tash (Achiktash) Inscription (first half of the 8th c.)[567]

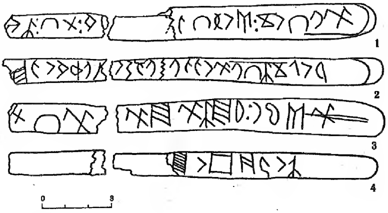

Figure 8.2.3-2: The Achik-Tash (Achiktash) Inscription by Kyzlasov[568]

The inscription is on the four sides of a wooden stick. The stick was broken into three parts, but the middle one was never found. Therefore, the middle part of the text in each row is missing; the transcription is shown in *Table 8.2.3-1.*[569] According to Vékony, the inscription was probably created for the accession of a new ruler to the throne.[570]

In the inscription, the glyph ʕ—a mirrored variant of the ϟ FORKED N /n/ were used. It is noteworthy that in the original inscription, the glyph ʕ of the FORKED N /n/ is practically identical to the glyph of the ʕ OPEN Q.

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[567] Vékony 2004a, p. 287

[568] Кызласов 1994, p. 279

[569] Vékony 1986a, *Fig. 1*

[570] Vékony 2004a, p. 293

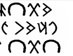
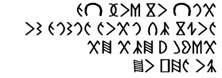
Written with normalized SR font		
IPA phonetic transcription	/tir $^{\text{ï}}$ð$^{\text{u}}$q ɛðe $^{\text{ø}}$r$^{\text{i}}$n̩ ... q$^{\text{a}}$ðɣ$^{\text{u}}$q h$^{\text{i}}$d$^{\text{ɛ}}$ ïtð$^{\text{ï}}$q $^{\text{o}}$qïmïn m$^{\text{i}}$ð... tɛg$^{\text{i}}$l $^{\text{a}}$j s$^{\text{u}}$ht $^{\text{ø}}$s$^{\text{y}}$t ... h$^{\text{i}}$ð q$^{\text{a}}$s$^{\text{a}}$r $^{\text{u}}$ð$^{\text{u}}$sï/	b$^{\text{i}}$t$^{\text{i}}$r̩h[$^{\text{ɛ/i}}$ŋ$^{\text{i}}$ð] iʃið$^{\text{i}}$b$^{\text{i}}$ð q$^{\text{o}}$p̩ $^{\text{ɛ}}$rt$^{\text{ɛ}}$r t [$^{\text{a}}$n$^{\text{i}}$ŋ]
Translation from the Turkic	'He says: the throne of the holy dominus We … reading the written stick sent by you Ay! Say it: Sogdian vengeance … You, Khazars. Good (=true, credible). End.'	you write [*singular or plural*] we all heard it avoid [you], [you] k[now]

Table 8.2.3-1: Transcription of the Achik-Tash Inscription

Ay was a personal name meaning 'Moon' in Proto-Turkic. In the fourth row, the name *Khazar* is found: /qasar/ 'Khazar' and the name of the Sogdians is in the third row: /s$^{\text{u}}$ht/ 'Sogdian'. Vékony supposed that in this inscription, the SR CS /t͡ʃ/ represents /s/.[571] This is possible, if the /t͡ʃ/>/s/ change happened in the language of this inscription. For instance, such a transition occurred in the Bashkir language.[572]

8.2.4. The Khumara building inscriptions

Khumara is an old Khazar fortress on the eastern side of the Kuban River, currently in the Karachay–Cherkess Republic (Russia). The Khumara Fortress (Russian: Хумаринское городище) was near a very important road, the main artery between Khwarezm and Byzantium in the Early Medieval Times.[573] The total area of the huge fortress was a quarter km^2, and the total length of its walls reached 1900 meters. A.V. Gadlo showed that the fortress was built in the beginning of the 8th century.[574] There are different building inscriptions in the fortress written in Steppean Rovash.

The inscription in *Fig. 8.2.4-1* is fragmentary; its transcription required reconstruction (drawing by archaeologist G. Vékony based on A.M. Ščerbak's publication).[575] According to Gadlo, the fortress was built in the 8th century.[576] According to Kyzlasov, the inscription was made in the second half of the 9th century or in the early 10th century.[577]

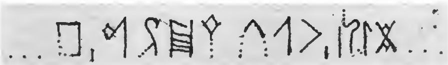


Figure 8.2.4-1: Drawing of a fragmentary inscription from Khumara Fortress.[578] On this relic, the glyph was used, a mirrored variant of the N GH /ɣ/.

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[571] Vékony 2004a, p. 294

[572] Vásáry, István 2010–2011: *Personal communication*

[573] Erdélyi 1983b, p. 264

[574] Gadlo 1979, pp. 152–153

[575] Ščerbak 1962, Fig. 1

[576] Gadlo 1979, pp. 152–153

[577] Кызласов 1994, p. 270

[578] Vékony 2004b

Written with typical Steppean Rovash font	□ ı ꝗ1ʎ▤Ÿ Ꭿ1> ı ⱶϞ√ᛝ
IPA phonetic transcription	/tᵘɣᵃlᵃs, d͡ʒᵃpdi, bˈt͡ʃigi ˈr/
Translation from Ogur	‘Tughalas made (built?), wrote its inscription.’ *or:* ‘N. the Tughalas made (built?), wrote its inscription.’

Table 8.2.4-1: Transcription of the One-row Ogur Inscription of Khumara

The word /tᵘɣᵃlᵃs/ is an ethnic name according to Ibn Rustah.[579] The last word /*ïr/ is the Ogur version of the Common Turkic verb /yaz/ ‘draw’.[580] The evidence of the existence of the Ogur verb /*ïr/ is the Hungarian verb *ír* /iːr/ ‘write’.[581] The verb /d͡ʒᵃpdi/ (< Proto-Turkic /yap/) means ‘built, did’, the Proto-Rovash > SHARP D is transcribed with /d͡ʒ/, suggesting that the inscription is in Ogur. The word /bˈt͡ʃˈg/ is the Ogur version of the Common Turkic /bitig/.[582] Since *Tughalas* /tᵘɣᵃlᵃs/ can be an ethnic name, it could also be a personal name. Moreover, since the beginning of the inscription is broken, the “*<Personal name>, the Tughalas*” structure is also a possible interpretation. An uncertainty of the transcription is the ligature Ꭿ /di/ in the reconstruction of the word Ꭿ1> /d͡ʒᵃpdi/ ‘made’, since the lower part of the ligature is damaged.

Fig 8.2.4-2a presents the photograph of a building inscription on a sandstone block found in 1962, and *Fig. 8.2.4-2b* shows its drawing. The original stone was re-used for the construction of the fortification wall and was broken into two pieces. The origin of the inscription is between the mid-9th century and beginning of the 10th century.[583]

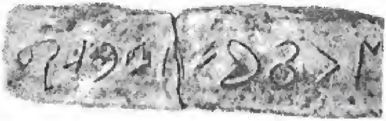

Figure 8.2.4-2a: Photograph of the One-row Inscription on a fragment of a sandstone block, between middle of the 9th and 10th centuries[584]

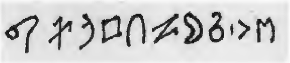

Figure 8.2.4-2b: Drawing of the One-row Inscription[585]

Written with normalized Steppean Rovash font	ꝗ1Χ϶□∩ ≠ϑ∂ ı >Ϻ
IPA phonetic transcription	/øð tᵉgˈn d͡ʒᵃratᵗï/
Translation from Ogur	‘Öd Tegin made [it].’

Table 8.2.4-1: Transcription of the One-row Inscription of Khumara

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[579] De Goeje, M. J. (ed.) 1892

[580] Vásáry, István 2010–2011: *Personal communication*

[581] Palló 1982, p. 111–113

[582] Róna-Tas 1992, pp. 12–13

[583] Baichorov 1989, p. 67, pp. 170–173; Türkic World, website

[584] Kuznetsov 1963, *Fig. 2–2*

[585] Vékony 1987a, p. 27; Vékony 2004b

The transcription was made by Vékony,[586] who transcribed the word ᑫXↄ□∩ as /dᵃratï/. Csiky stated that the right pronunciation of this word should be /jᵃrattï/.[587] Hence, the author of this book modified the original transcription of Vékony to this: /d͡ʒᵃratᵗ̤i/, since this Turkic word is undoubtedly the ancestor of the Hungarian word *gyárt* /ɟaːrt/ 'produce, make', and the sound values /d͡ʒ/ of the grapheme ∩ ARCHED D is known from the inscription of Bow Cover of Jitkov (*Section 8.2.1*). The word /d͡ʒᵃratᵗ̤ï/ is the Ogur version of the Common Turkic /jᵃrattï/. Based on this, the inscription is surely in Ogur.

The Öz /øz/ is a well-known Turkic personal name.[588] According to Vékony, the transition /z/>/ð/ happened in Khazar. Therefore, Öd /øð/ was identical with Öz /øz/. The /tegin/ was a Turkic and Khazar title (dignitary name). A ruler of the II. Turkic Khaganate was Kül Tegin.[589] There is an example for this dignitary name in the Khazar Khaganate in the sources: the name "*Er Tegin*" from the 680s.[590] In the Western Turkic Khaganate, the title *tegin* was also used, as it is attested to in inscriptions found in East Iran.[591] The word *tegin* survived as a personal name in the 10th century: a leader of the Magyars was called *Tétény* (its other form: *Tühütüm*).[592] This name can be found in the name of *Tétény* Village (present-day *Tadten* in Burgenland, Austria) near the Lake Fertő, in the name of *Tattendorf* 'Tatten Village' (present-day east of Vienna, Austria) near the Triesting River, and in the name of Budapest District 22: *Nagytétény* 'Great Tétény'.[593]

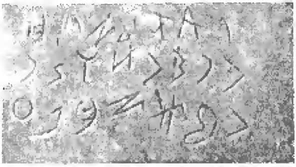

Figure 8.2.4-3a: Photograph of Three-row Inscription from the Khumara fortress[594]

The meaning of the One-row Inscription in *Fig. 8.2.4-2a* matches the first row of the Three-row inscription of the *Fig. 8.2.4-3a.* In the first row of *Fig. 8.2.4-3a,* the second symbol on the left is a ligature of the graphemes □ CLOSED R /r/, ↄ ARCHED E /a/, and X OPEN T /t/. These graphemes were used as individual glyphs in *Fig. 8.2.4-2a.* In the third row, the ligature contains X OPEN T /t/ and N GH /ɣ/.

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[586] Vékony 1987a, p. 27; Vékony 2004b

[587] Csiky, Gergely 2013: *Personal communication*

[588] Nadeljaev et al (ed.) 1969, p. 395

[589] Györffy et al. 1996, p. 23; Róna-Tas 1996c, p. 13

[590] Golden 1980, pp. 186–187

[591] Harmatta 1994, pp. 149–164

[592] Györffy 1998, p. 135

[593] Bartha 1984, p. 577; Györffy 1998, p. 135; Zelliger, Erzsébet 2010–2011: *Personal communication*

[594] Kuznetsov 1963, *Fig. 2–2*

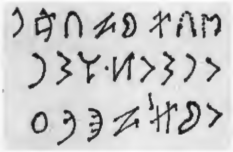


Figure 8.2.4-3b: Drawing of the Three-row Inscription[595]

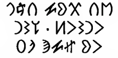
Written with normalized Steppean Rovash font	
IPA phonetic transcription	/ød tᵉgⁱn d͡ʒᵃratᵗï ðïnïmⁱðⁱɣ, ᵃsmᵃn ᶲðʸg tᵉɣⁱne aj/
Translation from Ogur	‘Öd Tegin (had it) made our nest [=home], As(es). Call it *Ödüg Tegin.*’

Table 8.2.4-2: Transcription of the Three-row Inscription of Khumara

In the word /tᵉɣⁱne/, there are *front* vowels. However, in other parts of this Three-row Inscription, the ϑ CLOSED G /g/ was applied near *front* vowels and another grapheme N GH /ɣ/ is used near *back* vowels. The probable reason of this inconsistency is that X OPEN T /t/ and N GH /ɣ/ was easier to apply to create the ligature . Another example for altering the velar and palatal consonants is the use of the velar X OPEN T /t/ in the first row instead of the palatal ∂ ARCHED T /t/. It is noteworthy that in this case the X OPEN T /t/ was not used in ligature. To summarize, this inscription demonstrates the inconsistent use of the velar and palatal consonants in Steppean Rovash (*Sect. 8.1.4*).

These texts are rich in information: the fortress of Khumara was built by *Öd Tegin*; therefore, it was named *Ödüg Tegin*. In the name *Ödüg*, the /g/ is the voiced version of the Turkic diminutive suffix /k/.[596] There are other examples for this structure: *personal name + title > geographical name*. For instance, *Phanagoria* (the ancient Greek colony on the Taman peninsula between the Black Sea and the Sea of Azov) has an alternative name: /tamɣantarqan/, in which the /tarqan/ is a title (dignitary name).

The drawing in *Fig. 8.2.4-4* was made by the student A.D. Besleneev on his summer holiday; hence, its accuracy may be limited. There is no photograph of the original relic, since it was destroyed before the arrival of the archaeologists.[597] In the inscription, the glyph O is a variant of D CLOSED J /j/. The word /aj/ means ‘speak, say, call’ in Turkic. The word /*asman/ probably mean ‘As’ or ‘Ases’, since /as/ was the name of the As–Alans and /man/ is a Turkic affix emphasizing the meaning (nation or tribe name).

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[595] Vékony 2004b

[596] Ligeti 1958, p. 448; Ligeti 1977, p. 78, Kononov 1980, p. 96

[597] Kuznetsov 1963, *Fig. 3–1;* TürkicWorld, website

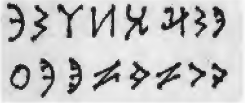


Figure 8.2.4-4: Drawing of the Two-row Inscription from Khumara Fortress[598]

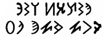
Written with normalized Steppean Rovash font	
IPA phonetic transcription	/ïnᵘmuzᵘɣ, ᵃsmᵃn øððʸn ᵋbⁱne aj/
Translation from Common Turkic (Khazar)	'Our nest [=home], As(es), call it *mansion of Ödün.*'

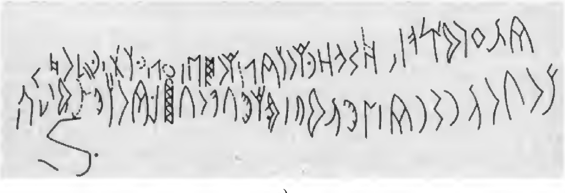
Table 8.2.4-3: Transcription of the Two-row Inscription of Khumara

The inscription in *Fig. 8.2.4-4* equates to the second and third rows of the inscription in *Table 8.2.4-2*. However, there are dialectical differences between *Table 8.2.4-2* and *3*. For instance, in the first row in *Table 8.2.4-3*, Ӿ SHARP T /z/ was used instead of the > SHARP D /ð/ in *Table 8.2.4-2*. A similar dialectical difference is between /ïn/ in *Table 8.2.4-3* and /ðⁱn/ in *Table 8.2.4-2*.

The ligature was composed of) ARCHED I /ï/ and Ɔ N /n/; the auxiliary slanted line was presumably applied in order to differentiate it from) ARCHED E /a/. The /n/ in the word *Ödün* was probably a diminutive suffix.

8.2.5. Mayatskoe Gorodishche Large Building Inscription

In 1978, during the Soviet–Hungarian–Bulgarian joint excavations of the Mayatskoe Gorodishche ('Stone Castle of Mayatskoe', other name: Mayaki citadel), S.A. Pletneva and G.E. Afanasyev found the longest known Steppean Rovash inscription.[599] Mayatskoe Gorodishche is in the natural architectural archeological museum-reserve "Divnogorie" in Liskinsky District of Voronezh Oblast in Russia. The citadel was built in the 9th century; the city itself existed since the end of the 8th century and belonged to the territory of the As–Alans.[600]. *Fig. 8.2.5-1a* and *b* are drawings by architect B. Erdélyi, a participant in the excavation.[601]



a)

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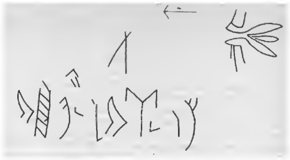
[598] Vékony 2004b

[599] Erdélyi 2004a, p. 76

[600] Erdélyi 1991

[601] Kyzlasov 1990; p. 16



b)

Figure 8.2.5-1a, b: Drawings of the Inscription of Mayatskoe Gorodishche by architect B. Erdélyi. On this relic, the glyph variants of the TRIPLE E /ɛ/e/, and of the ARCHED UE /ø/y/ were used.

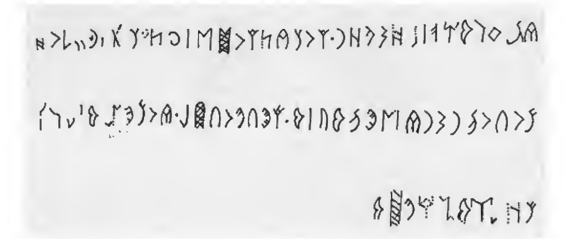


Figure 8.2.5-2: The drawing of the Inscription of Mayatskoe Gorodishche reconstructed by archaeologist G. Vékony

The ends of the first and second rows may show graphemes of a different script; those were probably engraved later. *Table 8.2.5-1* presents the transcription of the inscription.[602] In the inscription, the glyph variant of the CS /t͡ʃ/ is used. It is noteworthy that in the transcription (*Table 8.2.5-1*), the normalized CS /t͡ʃ/ is applied. In the inscription, the symbol is presumably a calligraphic version of the ligature NU /nu/.

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[602] Vékony 2004b

Written with normalized Steppean Rovash font	*First row:* … Ƴ[Ↄ]HƆI M ▤ >ŸHⱭ Ƴ>Ÿ • ƆN> ȝ ƽI ꟻϒ Ꝺ> ◻ ⅄Ɑ *Second row:* … ꝹꞆↃ ƴ∩Ɑ•ƽ ▤ ∩>Ↄ∩ȝŸ • ꝹI ⅡꝹ7 ȝM ⱭƆȝ Ↄ 7>∩ >ƴ *Third row:* Ꝺ ▤ ↃŸ ꞆꝹϒ NƳ
IPA phonetic transcription	*First row:* /danu ᵃq ᶲðʸg sᵘβ ᵃsˡl ᵋt͡ʃˡm xᵃɣᵃn bˡðˡŋ derˡbˡð ᵃltˡ sᵃβˡrïŋ […]/ *Second row:* /uð dⁱðy ᵒn mᵘnda ⁱltɛ ygʸʃ ⁱsⁱg bɛdiðᵋdⁱ ᵒl daðu inᵋg […]/ *Third row:* /onᵃɣ tᵉgⁱn ᵋbi ᶲg/
Translation from Common Turkic (Khazar)	*First row:* 'Don [River], white Ödüg River, As Country, [oh] my brother-khagan, our land of the Six-Savirs … ' *Second row:* 'Ud Didü On, here, in [this] country, ornamented several works. This inscription made by Ineg… ' *Third row:* 'Mansion of Onagh Tegin. Extol it.'

Table 8.2.5-1: Transcription of the Large Building Inscription of Mayatskoe Gorodishche

First row: Danu is the Don River in the As–Alan language. The *Aq* means white; this may be an attribute of the following river-name *Ödüg*, or the name of another river. *Ödüg* is the Khazar name of the Dnieper River.[603] The /altï saβïr/ 'Six-Savirs' is the name of a nation. As in the Turkic languages, the ethnic name made of the structure *number+name* is typical, e.g., *Onogur* 'Ten-Ogurs'. According to historian al-Masᶜūdī (10th century), the Turks called the Khazars *Savirs*.[604] Based on this data, in this rovash inscription, the alternative name of the Khazars was 'Six-Savirs'. According to the author of this book, the original ethnic name could have been the *Six-Savirs* if the ethnic name *Khazar* originated from the Roman title *Caesar* as Róna-Tas stated (*Sect. 3.5.1*).[605] In the last word (from the right), the grapheme between H R /r/ and Ƴ NG /ŋ/ is hard to read; Vékony reconstructed it as Ↄ ARCHED I /ï/.

Second row: Ud Didü On /uð dⁱðy ᵒn/ was a personal name. Another possible transcription of 7>∩ /dⁱðy/ is /dⁱdy/. According to Vékony, this was a Khazar version of the ethnic name *Jewish* originated from Hebrew.[606] However, Obrusánszky noted that the /dⁱðy/ meant 'father', 'grandfather', 'old man' in the Ancient Turkic.[607]

Third row: The second grapheme from the right needs reconstruction: it was N GH /ɣ/ or ϒ FORKED A /a/; however, the ϒ FORKED A /a/ has not known in other Steppean Rovash relic. Therefore, the first word was presumably *Onagh* NƳ /onᵃɣ/, but the *Ona* ϒƳ /onɒ/ is also possible if we suppose the existence of the ϒ FORKED A /a/ in the Steppean Rovash.

The inscription contains much information: the writer was *Ineg*, the builder was *Ud Didü On*, the nation was *Six-Savirs*, and the fortress was the *Mansion of Onagh Tegin*. The inscription declared the Khazars' supremacy of the region between the Don and Dnieper rivers, the land of the *As* people. It is noteworthy that the Mayatskoe Gorodishche is located on the right bank of the Don River; this geographical fact supports the exactness of the transcription.

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[603] Golden 1979, p. 173; Golden 1980, p. 252

[604] De Goeje 1893–1894, p. 120

[605] Róna-Tas 1999a, p. 228

[606] Vékony 2004a, pp. 221–222

[607] Obrusánszky, Borbála 2012: *Personal communication*

8.2.6. Mayatskoe Gorodishche smaller inscriptions

In 1909, N.E. Makarenko found short rovash inscriptions in the Mayatskoe Gorodishche. They date to the late 8th to the 9th century.[608] The drawings of the Steppean Rovash inscriptions were published by G.F. Turchaninov as well (*Fig. 8.2.6-1,3,4,5b*).[609] Vékony transcribed them and he identified their languages. One inscription (No. 2 according to Tuchaninov[610]) was identified as Ogur, it was presented in *Sect. 5.2.4.* based on the analysis of the rovash graphemes, I concluded that the Ogur inscription was made with Proto-Rovash, and oppositely, the other smaller inscriptions published by Turchaninov were written by Steppean Rovash. In the followings, the transcriptions of these presumably Steppean Rovash inscriptions are presented after each drawing.[611]

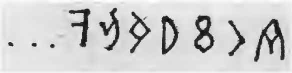

Figure 8.2.6-1: Drawing of Steppean Rovash Inscription *No. 1* of Mayatskoe Gorodishche[612]

Written with normalized Steppean Rovash font	ᖷ ᔓ⋗D8>ᗰ *or* ⋗ ᔓ⋗D8>ᗰ
IPA phonetic transcription	/daðqᵃjb'n β …/ *or* /daðqᵃjb'n k …/
Translation from Common Turkic (Khazar)	'I will write w …' *or* 'I will write k …'

Table 8.2.6-1: Transcription of Inscription *No. 1* of Mayatskoe Gorodishche

The left-hand grapheme can be ᖷ OPEN V /β/b-/ or ⋗ FORKED K /k/ as well. According to Vékony, this inscription shows typical features of the Khazar language: in the beginning of the word, the changes /j/ > /d/ and /z/ > /ð/ happened.

Rovash Inscription of Mayatskoe Gorodishche denoted as *No. 17* by Kyzlasov, see *Fig. 8.2.6-2*. The possible two graphemes of the inscription are ⦒ OPEN M /m/ and ⅄ FORKED T /t/. Kyzlasov dated the inscription to the 9th century. Based on the area, where the relic was found, the inscription is supposed Steppean Rovash and not Early Steppean Rovash. The inscription is still undeciphered.

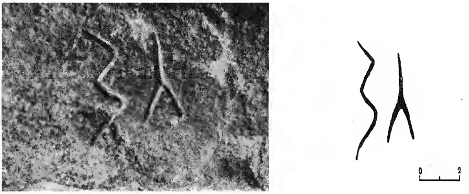

Figure 8.2.6-2: The photograph of the Steppean Rovash Inscription *No. 17* of Mayatskoe Gorodishche (9th c.).[613]

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[608] Makarenko 1911, pp. 21–22, *Fig. 19–22*

[609] Turchaninov 1964, pp. 75–76

[610] Turchaninov 1964, pp. 75–76

[611] Vékony 2004b

[612] Vékony 2004b

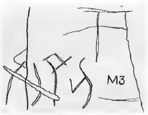

Figure 8.2.6-3: Drawing of Steppean Rovash Inscription *No. 3* of Mayatskoe Gorodishche[614]

Written with normalized Steppean Rovash font	∩ʕϟ
IPA phonetic transcription	/nˈband/
Translation from As–Alan	‘Bonding’

Table 8.2.6-3: Transcription of Inscription *No. 3* of Mayatskoe Gorodishche.[615] This transcription needs a linguistic review

The grapheme ʕ is the ligature of Ẏ RAISED B /b/, Y A /a/, and Ↄ N /n/. A special feature of this relic is that the inscription is on *two* stones, in such a way that half of the grapheme ∩ ARCHED D /d/ is on one stone and its other half is on another stone fitting the first one. The purpose of the text is obvious: it is a *building order* showing where the bonding has to be made.

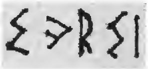

Figure 8.2.6-4: Drawing of the Rovash Inscription *No. 4* of Mayatskoe Gorodishche[616]

The grapheme Ʀ is the ligature of D CLOSED J /j/ and the mirrored glyph of ˥ ANGLED I /i/. In this inscription, the glyph ξ, a mirrored variant of the ʒ OPEN M /m/, was in use. This relic is related to the text in *Table 8.2.6-3*.

Written with typical Steppean Rovash font	ξ>Ʀξ|
IPA phonetic transcription	/s^{a}m^{a}jik^{a}m/
Translation from As or Alan	‘Let us assemble it.’

Table 8.2.6-4: Transcription of Inscription *No. 4* of Mayatskoe Gorodishche.[617] This transcription needs a linguistic review

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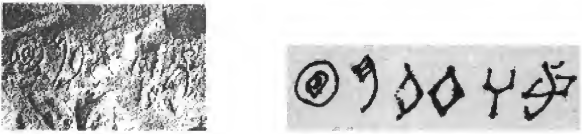
[613] Кызласов 1994, *Image D20*; Кызласов 1994, p. 261
[614] Makarenko, 1911, p. 28, *Fig. M3*
[615] Vékony 2004b
[616] Vékony 2004b
[617] Vékony 2004b



a) b)

Figure 8.2.6-5a: The photograph of Steppean Rovash Inscription *No. 5* of Mayatskoe Gorodishche made by S. Ya. Baichorov, and *b)* its drawing.[618]

In this inscription, the glyph ↄ, a mirrored variant of the Ↄ ARCHED I /i/ï/, was used.

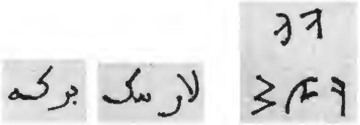
Written with normalized Steppean Rovash font	Ↄ⊳ ᗜYϟ
IPA phonetic transcription	/onaq $^{\varepsilon}$bi/
Translation from Common Turkic (Khazar)	‘Mansion of Onaq’

Table 8.2.6-5: Transcription of Inscription *No. 5* of Mayatskoe Gorodishche

The /-aq/ is a Turkic diminutive suffix of the personal name /on/, meaning ‘ten’.[619]

8.2.7. Bilingual Khazar Coin of Sweden

An inscribed coin was found in Sweden with Arabic and Steppean Rovash graphemes (*Fig. 8.2.7-1a, b,* and *c*).[620]



a) b) c)

Figure 8.2.7-1a, b) The Arabic and *c)* SR inscriptions on the Bilingual Khazar Coin of Sweden

The Arabic inscription in *Fig. 8.2.7-1a* means *blessing* or *wealth*,[621] and in *Fig. 8.2.7-1b* a personal name: /nār yīk/. The transcription of the Steppean Rovash inscriptions of *Fig. 8.2.7-1/c* is presented in *Table 8.2.7-1*.

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[618] Baichorov 1989, *Table 120*

[619] Gombocz 1915, pp. 38–39

[620] Vékony 1997a

[621] Charaf, Dr., Hassan 2010: *Personal communication*

Written with normalized Steppean Rovash font	*First row:* 7ᛚ; *second row:* ʒᚶ>
IPA phonetic transcription	*First row:* /ᶲβy/; *second row:* /ˈk ø̲ð̲ˈm/
Translation from Common Turkic (Khazar)	*First row:* 'Extolling.'; *second row:* 'Ik, myself.'

Table 8.2.7-1: Transcription of the Steppean Rovash inscriptions on the Bilingual Khazar Coin of Sweden

The word /ik/ was a personal name. Vékony claimed that this word is in Common Turkic (surely Khazar); since its Ogur version would be /yik/.[622] Gombocz stated that the /yīk/ in the Arabic text corresponded to the Common Turkic (Khazar) /ik/.[623]

The /nar/ was the name of a khagan (see Khagan Nar ЭИЛᒪ ӇЭ /nᵃr xᵃɣᵃn/ the Proto-Rovash inscription of the Mayaki Amphora in Ogur in *Fig. 5.2.1-2*). The Arabic inscription of the coin contains the full name of the khagan: *Nar Ik* in Common Turkic (Khazar). To summarize, the Arabic and the Steppean Rovash inscriptions on the coin are essentially identical.

8.2.8. Cattle skull from the kurgan Ermen Tolga

In 1970, a fragmented cattle skull was found in the plundered central burial of the kurgan Ermen Tolga (Kermen-Tolga), 15 km from Elista (Capital of Kalmykia, Russia).[624] In scientific literature, it is called *bull skull* several times. The relic is from the period between the 8th and 10th centuries. There are inscriptions on 11 of the 16 fragments of the skull. According to S.G. Klyashtorny and I. Vásáry, there are 80 symbols on the fragments.[625] *Fig. 8.2.8-1* presents the third row of the three-row inscription; *Fig. 7.2.12-2* shows the drawing of the reconstructed cattle skull; and in *Fig. 8.2.8-3* is the drawing of the reconstructed skull with the inscriptions. The cattle skull was reconstructed by archaeologists I. Erdélyi and I. Takács.[626] According to Takács, the age of the cattle was *adultis/maturus*.[627] According to Erdélyi, the inscription was written by *two* persons sitting opposite to each other, since the style of two rows of the inscription significantly differs from the third row, being upside down.[628] *Table 8.2.8-1* presents the transcription of the texts by Vékony,[629] which was improved by Danka.[630]

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[622] Vékony 2004a, p. 282

[623] Gombocz 1915, p. 48; Gombocz 1908, p. 22; Gombocz 1912

[624] Erdniev 1982, *Fig. 2–7;* Kyzlasov 1990a, *Fig. 13, 14*, pp. 42–47

[625] Klyashtorny & Vásáry 1987

[626] Erdélyi 1991, pp. 150–153

[627] Erdélyi 1991, p. 150

[628] Erdélyi, István 2010: *Personal communication*

[629] Vékony 2004b

[630] Danka, Balázs 2013: *Personal communication*

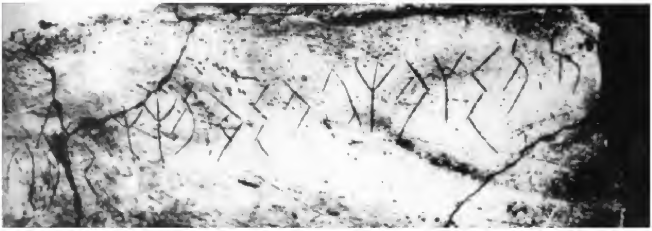

Figure 8.2.8-1: The fragments of the cattle skull of Ermen Tolga.[631] On this relic, the glyphs ɛ, a mirrored variant of the ʒ OPEN M /m/, and ʖ, a variant of the ʔ ARCHED UE /ø/y/, were used.

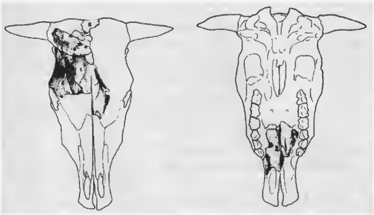

Figure 8.2.8-2: Reconstruction of the cattle skull of Ermen Tolga

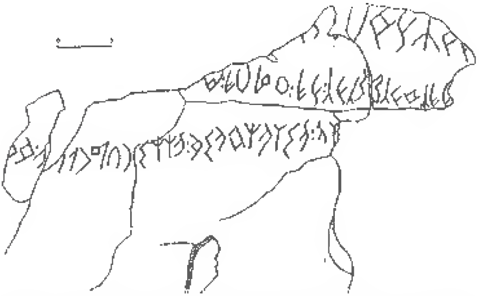

Figure 8.2.8-3: The drawing of the fragmented Inscription of Ermen Tolga

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[631] Vékony 1997a, cover inside

Written with typical SR font	*Second row (upside down):* …ʖ YᐳᐳYȢξYᐳYʖꟻ ᗩᑫ∩ꟻᗩ *First row (upside down):* ᐳ Ψʖᐳ ∩▤ *Third row:* ʖ >ᑫ∩ Yξ : Ψ Ψʖᐳ ξᐳ ᗩ Ψᐳ Yξ7: ʖ Y
IPA phonetic transcription	*Second row:* /deβ ˈði deβ ø abam ^{ø}gɛ ^{ɛ}b-^{a}ba ø …/ *First row:* /. ^{u}d byʃi ^{a}b[a] …/ *Third row:* /… a ø : ømɛ b^{a}ʃ de ^{a}b^{a}m byʃi iʃ : m^{a}ŋ^{a} *(undechipered)*…/
Translation from Common Turkic (Khazar)	*Second row:* 'Spirit master, spirit, think! My father, councilor house-father, think!' *First row:* ' . bovine-wizard father …' *Third row:* ' Oh : think! Don't think, head! Eat! My wizard father, drink! For my … *(undechipered)*'

Table 8.2.8-1: Transcription of the fragmented Inscription of Ermen Tolga. The transcription was made by Vékony;[632] however, it needs more research.

Vékony supposed that the word ꟻᗩ /deβ/ 'spirit' was an As or Alan loanword (< Old Persian /daiva/). However, Danka claimed another possible reading: the Ogur /d͡ʒeβ^{y}/, which was a Turkic military position, its origin is the Eastern Old Turkic /jabgu/.[633]

The word /iði/ means 'master, owner'.[634] Danka proposed that the trasncription of the sixth word is not /ygɛ/ as Vékony supposed, but /øgɛ/ 'councilor', which was a high Turkic office (position).[635]

The expression Yᐳᐳ /^{ɛ}b-^{a}ba/ 'house-father' meant the spirit of the house, its defender. The inscription recorded a magic text, probably rhythmically chanted during a shaman ritual.[636]

8.2.9. The Rovash inscription on the Kievan Letter

In 1962, N. Golb discovered a non-Hebrew inscription on the bottom left corner of the Kievan Letter.[637] The authenticity of the letter was examined by Róna-Tas.[638] A photocopy of the Steppean Rovash inscription on the Kievan Letter is presented in *Fig. 8.2.9-1*. According to O. Pritsak, the Kievan Letter was made before 930 AD.[639] Iranist J. Harmatta proved that the Kievan Letter was not written in Kiev.[640] Schwarzfuchs proved that it was addressed to Kiev.[641] There is this sentence in it: "*we (the singers of the letter) inform you, the community of Kiev*".[642] The place where the Hebrew text was written was named in the letter *K'.MN, which can be reconstructed as *Kärmän*.[643] Though the Khazar–Jewish letter-writing orthography used the denomination *madīnah* 'city' for the Khazar capital, it probably corresponds to *Kärmän*, according to Vékony. This name was probably used to specify the Khazar capital, and the letter was written there.

First, O. Pritsak gave a transcription of the non-Hebrew inscription,[644] which was refined by L. Ligeti;[645] and this transcription was analyzed by A. Róna-Tas.[646] According to him, the Kievan

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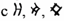
[632] Vékony 2004b
[633] ED 873
[634] ED 41, *idi* a. 'master, owner'
[635] ED 101, *öge* a., 'councilor'
[636] Vékony 2004b
[637] Golb & Pritsak 1982
[638] Róna-Tas 1982a, p. 350
[639] Golb & Pritsak 1982, 42–3, p. 71
[640] Harmatta 1997a, pp. 119–140
[641] Schwarzfuchs 1984, pp. 432-434; cf. Erdal 1999b, p. 95; Vékony 2004a, p. 277
[642] Golb & Pritsak 1982, p. 6
[643] Vékony 2004a, p. 277
[644] Golb & Pritsak 1982
[645] Ligeti 1984, pp. 10–17
[646] Róna-Tas 1983–1984

Letter is from 955 to 961 for historical reasons.[647] Pritsak's transcription of the inscription was /hokurym/. However, the last (leftmost) symbol of the inscription is far from being a normal Old Turkic  M /m/ grapheme.[648] Furthermore, the first (rightmost) symbol of the inscription is only hypothetically taken to be the ligature of a Hebrew ה HE /h/ with the Old Turkic 𐰆 O /o/u/ graphemes. *Fig. 8.2.9-2* shows the precise drawing copied directly from the photograph of the original text.[649] Based on Vékony's transcription,[650] the inscription was written in Steppean Rovash and not Old Turkic.

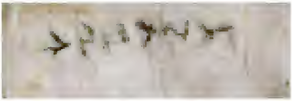


Figure 8.2.9-1: Enlargement of the original Steppean Rovash inscription on the Kievan Letter[651]

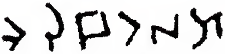


Figure 8.2.9-2: Drawing of Steppean Rovash inscription on the Kievan Letter[652]

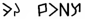
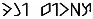
Written with Steppean Rovash font	
Written with normalized Steppean Rovash font without ligatures	
IPA phonetic transcription	/oɣˈðïq ilˈk/
Translation from Common Turkic (Khazar)	'We have read. Ilik.'

Table 8.2.9-1: Transcription of the Steppean Rovash inscription on the Kievan Letter

Ilik was the name of the vice-king in the Khazar Khaganate (*Sect. 8.2.2*). The vice-king was in charge of the day-to-day operations.[653] Generally, the version *yilik* is known for the vice-king[654], but Z. Gombocz proved that the Arabic form *yilik* 'vice-king' can also be transcribed as *ilik*.[655] Other versions of *ilik* were *ilek* or *ilig*.[656] The etymology of the *ilig* is *il* + *lig*, its meaning is 'who has people;' this dignitary name was common in Turkic nations. The title was also used as a personal name. According to Constantine VII Porphyrogenitus, *Ielekh* (version of *Ilik*) was the personal name of one of the sons of the Grand Prince Árpád. The name *Ielekh* survived in the geographical name as *Üllő* Village near Budapest (Hungary).[657] In the Gesta Hungarorum, the first record of early Hungarian history, the name *Hulec* /hylek/ was mentioned as member of the Árpád dynasty. The name *Hulec* is the labialized variant of the Turkic name /ilik/,[658] as Vékony also stated.[659]

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[647] Róna-Tas 2001, p. 181

[648] Erdal 1999b, p. 97

[649] Vékony 2004a, p. 278

[650] Vékony 2004a, pp. 277-282

[651] Wikimedia Commons, website: *Okurum-Khazar.png*. Public Domain. Retrieved in 2011 from http://commons.wikimedia.org/wiki/File:Okurum-Khazar.png. A part of the image.

[652] Vékony 2004a, p. 278

[653] Golden 1984, pp. 474–486

[654] Golden 1980. p. 162, pp. 184–185

[655] Gombocz 1915, p. 48; Gombocz 1908, p. 22; Gombocz 1912

[656] Khazarian Names, website, *www.khazaria.com*

[657] Vásáry 2003

[658] Ligeti 1979, p. 261

[659] Vékony 2004a, p. 282

The Steppean Rovash inscription /oɣⁱ̈ðïq ilⁱk/ 'We have read. Ilik' in *Fig. 8.2.9-1* most probably functioned as reconfirmation of the letter. The verb /oɣⁱ̈ðïq/ 'we have read' demonstrates the result of the /q/>/ɣ/ transition. As the inscription preserved the official Khazar language, it proves that it belonged to the Common Turkic. It is noteworthy that Erdal also supposed that Khazar was Common Turkic and not Ogur.[660]

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[660] Erdal 1999b, pp. 76–107

9. The Szekely-Hungarian Rovash

9.1. Description of the script

9.1.1. General properties

Szekely-Hungarian Rovash has been in continuous use during the entire history of Hungary, albeit not as an official writing system. Today, the usage of SHR is becoming extensive. Examples for the current applications of SHR include Rovash scripts in public places, books, journals and other media, including both printed and electronic publications. For instance, in the Hungarian Electronic Library, there are more than 50 books written in SHR.[661] The detailed presentation of the historical and contemporary use of SHR is in *Subch. 9.2.*

9.1.2. Naming of the script

Throughout history, there were several names for the *Szekely-Hungarian Rovash* script,[662] including *Szekely Letters* (Nikolsburg Alphabet, 15th century, see *Fig. 9.2.5-2*), *Scythian alphabet* (Rudimenta, 1598, see *Fig. 9.2.7-7a,b*), *Elements of the Ancient Hunnic Language* (also in Rudimenta), (*Old Fashioned*) *Szekely Alphabet* (Kájoni, 1673, see *Fig. 9.2.8-9*), *Antique Hunnic Elements* (Harsányi, 1678, see *Fig 9.2.8-11*, Hickes, 1703), *Hunnic-Szekely Alphabet* (Bél, 1718, see *Fig. 9.2.9-1*), *Hunnic Elements* (Hensel, 1730, see *Fig. 9.2.9-2*), *Hungarian Alphabet* (Dési, 1753, see *Fig. 9.2.9-4*), *Hunnic-Hungarian script* (Fischer, 1889), and *Hungarian Rovash script* (Sebestyén[663], 1909, 1915).

9.1.3. Direction of the Szekely-Hungarian Rovash script

Szekely-Hungarian Rovash uses both LTR and RTL directions, but the latter is the original and dominant one. However, in medieval times the LTR direction appeared, and in contemporary use a part of the SHR activity is based on the LTR direction. For the LTR direction, either the mirrored graphemes (of the RTL direction) or non-mirrored graphemes are used (*Table 9.1.3-1*). Moreover, there are examples for the boustrophedon (alternating directions, see *Table 9.1.3-2*), the top-to-bottom direction (Csíkszentlélek, after 1806, *Fig. 9.2.10-2*), and the organic motif-building usage in the fine arts as well.[664] Applying the boustrophedon, the text in the alternate rows can be rotated 180 degrees or the graphemes can be mirrored.

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[661] Bilisics 2008; Bilisics 2007

[662] Varga 2001

[663] Sebestyén 1909, 1915

[664] Sebestyén 1915, pp. 22–24

Szekely-Hungarian Rovash documents with LTR direction
Constantinople Inscription, 1515, *Fig. 9.2.7-4a, b*
Poem by Szamosközy against Emperor Rudolf II, (the title is RTL), 1604, *Fig. 9.2.8-1*
Alphabet and Inscriptions by Verpeléti Kiss, 1935, *Fig. 9.2.11-2b*
Inscriptions by Pál, 1992 and 1995, *Fig. 9.2.11-10*
Rovash scripts carved into a wood chandelier, 1993, *Fig. 9.2.11-11*

Table 9.1.3-1: Examples of LTR direction

Szekely-Hungarian Rovash documents with the boustrophedon direction
Bologna Rovash Calendar, 1690 (earlier origin), *Fig. 9.2.5-14a* and *Fig. 9.2.5-14b)*
Numeral Rovash Stick from Sepsiszentkirály, end of 19th – beg. 20th c., *Fig. 9.2.10-8*
Explanatory Text and Poem by S. Weöres, 2004, *Fig. 9.2.12-3a, b)*
Part of a Novel, website, *Fig. 9.2.12-6*

Table 9.1.3-2: Examples of boustrophedon direction

The order of the rows is usually top–down but there are a few examples of bottom–up, like the Patakfalvi Bible (*Fig. 9.2.9-8*).[665] Upper and lower case graphemes can be aligned along the baseline or symmetrically arranged along the horizontal centerline (*Fig. 9.2.12-12a* and *Fig. 9.2.12-12b*).[666]

9.1.4. Fundamental Szekely-Hungarian Rovash letters

Table 9.1.4-1 presents the contemporary Szekely-Hungarian Rovash graphemes. In the first column the glyphs of the most typical Szekely-Hungarian Rovash graphemes are listed. In most cases, the earliest occurrence of each glyph is listed in the row of the present-day grapheme. Therefore, some historical glyph variants are considered as individual graphemes if they function as individual graphemes in present-day use. In this case, examples of contemporary use are listed as well. Due to the development of the Hungarian language, in the case of a few glyphs, the historical and contemporary use may differ. Therefore, historically used sound values of the graphemes are also denoted in *Table 9.1.4-1.*

The grapheme facing in *Table 9.1.4-1* generally follows the relics and publications. However, the graphemes from the LTR-directed Constantinople Inscription (*Fig. 9.2.7-4a*) are mirrored.

Glyph	Name	Examples of SHR graphemes in relics and publications	Phonetic value[667]
𐲀	A	Bologna Rovash Relic, 1690 (earlier origin), *Fig. 9.2.6-4* Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8, glyph:* ◁	/ɒ/ (*historically also* /a/aː/)

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[665] Tisza et al. 2009

[666] Sípos, László 2008–2011: *Personal communication*

[667] E. Abaffy 2003a, pp. 115–125; 2003b, pp. 301–347; 2003c, pp. 596–609; 2003d, pp. 710–718; 2003e, pp. 789–799; Korompay 2003e; pp. 781–788

Glyph	Name	Examples of SHR graphemes in relics and publications	Phonetic value[667]
𐲁	AA	Bodrog, around 900, *Fig. 9.2.2-1, in a lig., sound:* /eː/ Székelydálya, around 1400, *Fig. 9.2.4-1* Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8, glyph:* 𐲁𐲁 Csíkszentlélek, after 1806, *Fig. 9.2.10-2, glyph:* 𐲁𐲁	/aː/ (*historically also* /ɒ/a/e/eː/)
𐲂	B	Székelydálya, around 1400, *Fig. 9.2.4-1*	/b/
𐲄	C	Székelydálya, around 1400, *Fig. 9.2.4-1*	/t͡s/
𐲆	CS	Székelydálya, around 1400, *Fig. 9.2.4-1*	/t͡ʃ/
𐲇	D	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/d/
	DZ	Verpeléti Kiss, 1935, *Fig. 9.2.11-2b, glyph:* Balás,1988, *Fig. 9.2.11-6, Fig. 9.2.11-7, glyph variant* Vér: 'Tree of Life', First Edition, 2001, *Fig, 9.2.12-1* "Eclipse of the Crescent Moon", 2009, *Fig. 9.2.12-13b*	/d͡z/
	DZS	Alphabet by Verpeléti Kiss, 1935, *Fig. 9.2.11-2b,* *glyph:* Balás, 1988, *Fig. 9.2.11-6, Fig. 9.2.11-7* Vér: 'Tree of Life', First Edition, 2001, *Fig. 9.2.12-1* "Eclipse of the Crescent Moon", 2009, *Fig. 9.2.12-13a, b*	/d͡ʒ/
𐲉	E	Székelydálya, around 1400, *Fig. 9.2.4-1*	/ɛ/ (*historically also* /e/eː/)
𐲊	CLOSED E	Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b, glyph:* 𐲏 Csíkszentmiklós, 1501, *Fig. 9.2.7-1, 9.2.7-3* Bologna Rovash Relic, 1690 (earlier origin), *Fig. 9.2.6-4*	/e/eː/ (*historically also* /ɛ/)
𐲋	EE	I.M. Csulyak, 1610–1645, *Fig. 9.2.8-5, sound*: /ɛ/*eː/ G.M. Csulyak, 1654, *Fig. 9.2.8-6, sound*: /ɛ/eː/ Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8, glyph:* ¯	/eː/
𐲌	F	Bodrog, around 900, *Fig. 9.2.2-1, earliest glyph:*	/f/
𐲍	G	Erdőszentgyörgy, turn of the 14th c.,[668] *sound:* /d͡ʒʲ/ Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, sound:* /g/	/g/ (*earlier also* /d͡ʒʲ/)
𐲎	GY	Nikolsburg, 15th c., *Fig. 9.2.5-2, also a glyph variant:*	/ɟ/ (*earlier:* /d͡ʒʲ/g/)
𐲏	H	Homoródkarácsonyfalva, ca. 13th c., *Fig. 9.2.3-2a, b, c* Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a, glyph:* 𐲊 Kájoni, Ancient Alphabet, 17th c., *Fig. 9.2.8-9, glyph:*	/h/
𐲐	I	Székelydálya, around 1400, *Fig. 9.2.4-1*	/i/
𐲑	II	Second Alphabet by Csulyak, 1610–1645, *Fig. 9.2.8-5* Unified Alphabet by Libisch, 1989, *Fig. 9.2.11-8*	/iː/
𐲒	J	Vargyas, 12th-13th c., *Fig. 9.2.3-1b, sound:* /i/ Homoródkarácsonyfalva, *Fig. 9.2.3-2b, sound:* /i/, *glyph:*	/j/ (*historically:* /j/i/iː/)
𐲓	K	Clay Twyer of Bodrog, around 900, *Fig. 9.2.2-1*	/k/

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[668] Bözödi 1935; Ráduly 2007b, p. 3; Ráduly 2007c, p. 9

Glyph	Name	Examples of SHR graphemes in relics and publications	Phonetic value[667]
𐳔	OPEN K	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/k/ɒk/aːk/
𐳖	L	Székelydálya, around 1400, *Fig. 9.2.4-1* Constantinople, 1515, *Fig. 9.2.7-4a, mirrored glyph:* 𐳖 Dálnok, 1526, *Fig 9.2.7-5b, glyph:* 𐳖	/l/
𐳗	LY	Nikolsburg, 15th c., *Fig. 9.2.5-2, earlier glyph:* 𐳗 Bologna Rovash Relic, 1690 (earlier origin), *Fig. 9.2.6-4* I.M. Csulyak 1610–1645, *Fig. 9.2.8-5, glyph:* 𐳗	/j/ʎ/
𐳘	M	Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b* Székelydálya, around 1400, *Fig. 9.2.4-1, glyph:* 𐳘	/m/
𐳙	N	Bodrog, around 900, *Fig. 9.2.2-1, in a ligature* Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b* Bonyhai, 1629, *Fig. 9.2.8-3, sound:* /ɲ/	/n/ (*historically also* /ɲ/)
𐳚	NY	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/ɲ/
𐳛	O	Clay Twyer of Bodrog, around 900, *Fig. 9.2.2-1*	/o/ (*earlier also* /oː/u/)
𐳜	OO	Csíkszentmiklós Inscr., 1501, copy: 1751, *Fig. 9.2.7-3*	/oː/ (*earlier also* /o/)
𐳝	OE	Csíkszentmiklós Inscr., 1501, copy: 1749, *Fig. 9.2.7-1, glyph:* 𐳓 Constantinople, 1515, *Fig. 9.2.7-4a, glyph:* 𐳞*, sound values:* /ɛ/e/eː/ Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7b, glyph:* 𐳞 Gönczi relic, about 1680, *glyph*: 𐳝.[669] Dobai Alphabet, 1753, *glyph*: 𐳝, *Fig. 9.2.9-4*	/ø/ (*earlier also* /ɛ/e/eː/øː/)
𐳟	OEE	I.M. Csulyak, 1610–1645, *Fig. 9.2.8-5* Alphabet of the Book of Mátyás Bél, 1718, *Fig. 9.2.9-1*	/øː/ (*historically also* /ø/)
𐳠	P	Székelydálya, around 1400, *Fig. 9.2.4-1* Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7b, glyph:* 𐳠	/p/
[illegible]	Q	Bonyhai, 1629, *Fig. 9.2.8-3, glyph:* [illegible] Carving knife of scouts, 1930s, *Fig. 9.2.11-1, glyph:* [illegible] Vér: 'Tree of Life', First Edition, 2001, *Fig. 9.2.12-1* Book "Eclipse of the Crescent Moon"[670]	/k/
𐳢	R	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, glyph:* 𐳢	/r/
𐳤	S	Székelydálya, around 1400, *Fig. 9.2.4-1, in a ligature* Nikolsburg, 15th c., *Fig. 9.2.5-2, earlier glyph:* 𐳤	/ʃ/
𐳥	SZ	Homoródkarácsonyfalva, ca. 13th c., *Fig. 9.2.3-2b*	/s/
𐳦	T	Vargyas, 12th-13th c., *Fig. 9.2.3-1b, sound* /d/t/ Constantinople, 1515, *Fig. 9.2.7-4a, sound* /d/	/t/ (*before the 16th c.* /t/d/)
𐳨	FORKED TY	Csíkszentmiklós, 1501, *Fig. 9.2.7-1, 9.2.7-3*	/c/ (*before the 13th c. surely* /t/)

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[669] Sebestyén 1915, p. 112

[670] Rumi, Sipos, & Somfai 2009

Glyph	Name	Examples of SHR graphemes in relics and publications	Phonetic value[667]
	U	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Csíkszentmiklós, 1501, *Fig. 9.2.7-1, glyph:*	/u/ (*historically* /uː/y/ *also*)
	UU	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*	/uː/ (*historically* /u/ *also*)
	CLOSED OE-UE	Székelydálya, around 1400, *Fig. 9.2.4-1, sound:* /e/ Bologna Rovash Relic, 1690 (earlier origin), *Fig. 9.2.6-4* Kájoni, Ancient Alphabet, 17th c., *Fig. 9.2.8-9, glyph:* Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8, glyph:*	/ø/øː/y/yː/ (*historically also* /*e/)
	OPEN UE	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a* Kájoni, Ancient Alphabet & Inscr., 17th c., *Fig. 9.2.8-9, sound:* /øː/y/yː/	/y/ (*historically* /øː/yː/ *also*)
	OPEN UEE	Harsányi Alphabet, 1678, *Fig. 9.2.8-11* “Lord’s Prayer” Map of Hensel, 1730, *Fig. 9.2.9-2* Book “Rovash Fundamentals”, 2010, *Fig. 9.2.12-19*	/yː/ (*historically* /ø/øː/y/ *also*)
	V	Vargyas, 12th-13th c., *Fig. 9.2.3-1b, sound* /y/ Homoródkarácsonyfalva, *Fig. 9.2.3-2b, sound* /uː/ Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, sound* /v/	/v/ (*historically* /y/u/uː/)
	W	Carving Knife of Scouts, 1930s, *Fig. 9.2.11-1, glyph*: Pál, 1992, *Fig. 9.2.11-10* Vér: ‘Tree of Life’, 2001, *Fig. 9.2.12-1, glyph*: Book “Eclipse of the Crescent Moon”,*;Fig. 9.2.12-13d*	/v/ (*in case of English-origin words optionally* /w/)
	X	Bonyhai, 1629, *Fig. 9.2.8-3, glyph:* Bárczy, 1971, *Fig. 9.2.11-5, glyph*: Pál, 1992, *Fig. 9.2.11-9, glyph*: Vér: ‘Tree of Life’, 2001, *Fig. 9.2.12-1, glyph*: Modified the glyph by Living Rovash Conf., 2008[671] Book “Eclipse of the Crescent Moon”,*;Fig. 9.2.12-13c*	/ks/
	Y	Bonyhai, 1629, *Fig. 9.2.8-3, glyph:* Carving Knife of Scouts, 1930s, *Fig. 9.2.11-1, glyph:* Maghy, 1965, *Fig. 9.2.11-4 (glyph variant)* Bárczy, 1971, *Fig. 9.2.11-5 (different glyph)* Pál, 1992, *Fig. 9.2.11-9 (different glyph)* Vér: ‘Tree of Life’, First Edition, 2001, *Fig. 9.2.12-1* Book “Eclipse of the Crescent Moon”,*;Fig. 9.2.12-13d*	/i/j/
	Z	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, glyph:*	/z/
	ZS	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/ʒ/ (*earlier* /ʃ/)

Table 9.1.4-1: The fundamental SHR graphemes and some relics where they can be found

The CLOSED E and OPEN K were used sporadically during history. The CLOSED E is used even today in some dialects for /e/. The application of OPEN K is optional, and there are several variations on its use.

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[671] Hosszú, Rumi & Sípos 2008, p. 183

Due to the parallel use of the Szekely-Hungarian Rovash and the Latin-based Hungarian orthographies from medieval times onwards, there is a converging process in the developments of these Hungarian alphabets: several Szekely-Hungarian Rovash writers preferred using Szekely-Hungarian Rovash graphemes corresponding to each Latin-based Hungarian grapheme. The dominant traditions of developing the Szekely-Hungarian Rovash grapheme set are (*i*) the use of existing glyph variants for representing new sounds (*Glyph variant*) and (*ii*) creation of new glyphs based on ligature of existing graphemes (*Ligature formation*, see *Table. 3.1-4* and *Subch. 3.6*).

In the Latin-based Hungarian orthography *q*, *x*, *y*, and *w* are exclusively used in historical family names and loanwords. Therefore, Szekely-Hungarian Rovash writers needed appropriate Szekely-Hungarian Rovash graphemes to avoid vagueness in transcribing these words. The development of these Szekely-Hungarian Rovash graphemes started as early as in 1629 (*Fig. 9.2.8-3*) and finished in 1971. In 2008, these glyphs became widely accepted shapes.[672] For instance, the grapheme *w* of the Latin-based Hungarian orthography represents the phoneme /v/; however, in the case of English-origin words, it is sometimes pronounced as /w/. Similarly, the SHR ᛗ W is on occasion used to represent /w/.

Table 9.1.4-2 shows the system of contemporary Szekely-Hungarian Rovash consonants based on Hungarian phonetics,[673] where the grapheme to the left in the cell is *voiceless* and to the right is *voiced*. The sound /ʎ/ exists in dialects only;[674] the 𐲗 LY is generally pronounced with /j/. The sound value of the SHR 𐲩 CH /x/ (*Table 9.1.6-1*) is not a phoneme of present-day Hungarian; however, it is used as an allophone in some words. The contemporary Szekely-Hungarian Rovash vowels are presented in the phonetic system as well (*Fig. 9.1.4-1*).[675]

Place of articulation	Plosive		Nasal	Fricative		Affricate		Liquid	
Bilabial	𐲠 /p/	𐲂 /b/	𐲘 /m/						
Labiodental				𐲌 /f/	𐲮,ᛗ /v/				
Alveolar	𐲦 /t/	𐲇 /d/	𐲙 /n/	𐲥 /s/	𐲯 /z/	𐲄 /t͡s/	𐲯‍𐲇 /d͡z/	𐲖 /l/	𐲢 /r/
Postalveolar				𐲤 /ʃ/	𐲰 /ʒ/	𐲆 /t͡ʃ/	𐲰‍𐲇 /d͡ʒ/		
Palatal	𐲨 /c/	𐲎 /ɟ/	𐲚 /ɲ/		𐲒,𐲗,† /j/			𐲗 /ʎ/	
Velar	𐲓,𐲔 /k/	𐲍 /g/		𐲩 /x/					
Laryngeal (glottal)				𐲏 /h/					

Table 9.1.4-2: The phonetic system of the present-day Szekely-Hungarian Rovash consonants

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[672] Hosszú, Rumi & Sípos 2008, p. 183

[673] E. Abaffy 2003c, p. 600; 2003d, p.711

[674] E. Abaffy. 2003e, p. 790

[675] E. Abaffy 2003d, p. 712

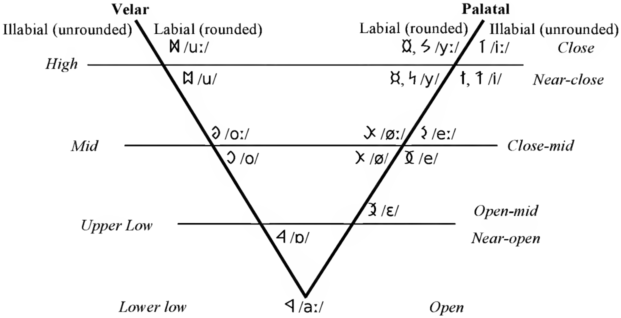

Fig. 9.1.4-1: The graphical representation of the phonetic system of the present-day Hungarian vowels, presenting typical glyphs of the Szekely-Hungarian Rovash graphemes

9.1.5. The modern reptile-like symbols (pseudo-ligatures)

The historical pronunciations of the reptile-like symbols are detailed in *Table 3.6.4-2*. They are also applied in the modern Szekely-Hungarian Rovash (*Table 9.1.5-1*). The present-day use of 𐲲 TPRUS and 𐲃 TPRU is related to their reconstructed original meaning, the period of time[676]: 𐲲 TPRUS represents /eːv/ ‘year’ and 𐲃 TPRU represents /hoːnɒp/ ‘month’. Therefore, they can be applied altogether with 𐲱 NAP /nɒp/ ‘day’ in describing date in forms, e.g. ….. 𐲲, ….. 𐲃, ….. 𐲱 /year:….., month: ….., day: ….../.

Glyph	Name	Examples of reptile-like symbols in relics and publications	Modern sound value
𐲃	AMB	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a* Diploma Work of Markolt, 2005, *Fig. 9.2.12-5*	/ɒmb/
𐲈	AND	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* SHR Keyboard of Dávid, 2008, *Fig. 9.2.12-10*	/ɒnd/
𐲧	ANT	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a* Kájoni, Ancient Alphabet & Inscr., 1673, *Fig. 9.2.8-10* Bod, 1739, *Fig. 9.2.9-3a,b,c*	/ɒnt/
𐲡	EMP	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Diploma Work of Markolt, 2005, *Fig. 9.2.12-5*	/ɛmp/
𐲅	ENC	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/ɛn͡ts/

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[676] Vékony 2004a, p. 96

Glyph	Name	Examples of reptile-like symbols in relics and publications	Modern sound value
	ENT	Brick Inscription from Székelyderzs, 15th-16th c., *Fig. 9.2.5-1* Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Bologna, 1690 (earlier origin), *Fig. 9.2.6-4, glyph:* Ϯ Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18*	/ɛnt/
	MB	Constantinople Inscription, 1515, *Fig. 9.2.7-4a* Kájoni, Ancient Alphabet & Inscr., 1673, *Fig. 9.2.8-10* Bod, 1739, *Fig. 9.2.9-3a,b,c* Manuscript of Thomsen from 1913, *Fig. 9.2.7-4b* Table-calendar of Forrai, Jr., 2008, *Fig. 9.2.12-11a*	/mb/
	NAP	Kájoni, Ancient Alphabet & Inscr., 1673, *Fig. 9.2.8-9* Table-calendar of Forrai, Jr., 2008, *Fig. 9.2.12-11b* Wall-calendar for 2010, *Fig 9.2.12-17* Giczi, 2009, *Fig. 9.2.12-15* Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18*	/nɒp/
	NB	Bologna Rovash Relic, 1690 (earlier origin), *Fig. 9.2.6-4* SHR Keyboard of Dávid, 2008, *Fig. 9.2.12-10*	/nb/
	TPRU	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a* Bod, 1739, *Fig. 9.2.9-3a,b,c* Wall-calendar for 2010, *Fig 9.2.12-17* Giczi, 2009, *Fig. 9.2.12-15* Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18* Calendar & Educational Panel, 2011, *Fig. 9.2.12-20*	/hoːnɒp/
	TPRUS	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Phone Card released in 2002, *Fig. 9.2.12-2* Wall-calendar for 2010, *Fig 9.2.12-17* Giczi, 2009, *Fig. 9.2.12-15* Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18* Calendar & Educational Panel, 2011, *Fig. 9.2.12-20*	/eːv/
	UNK	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/unk/
	US	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Table-calendar of Forrai, Jr., 2008, *Fig. 9.2.12-11b* Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18*	/uʃ/

Table 9.1.5-1: The reptile-like symbols in modern use

9.1.6. Historically used individual Szekely-Hungarian Rovash letters

The historically used Szekely-Hungarian Rovash graphemes are presented in *Table 9.1.6-1.* They are occasionally used in present-day Szekely-Hungarian Rovash texts. Moreover, transcribing Ancient and Old Hungarian words to Szekely-Hungarian Rovash requires the historical graphemes CH /x/, GH /ɣ/, and OPEN V /β/. For instance, the /x/ was used as a phoneme in the Hungarian language approximately to the 12th century.[677] The sound /ɣ/ is not a phoneme of the present-day Hungarian language; however, as an allophone, it appears in some words, e.g. *APEH-*

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[677] Németh 1934; Melich 1925

ből /ɒpɛɣbøːl/ ‘from the APEH (the abbreviation of the earlier name of the Hungarian tax office)’.[678]

Glyph	Name	Examples of historically used SHR graphemes	Sound value
Ø	DIAGONAL F	Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b* Homoródkarácsonyfalva, ca. 13th c., *Fig. 9.2.3-2b*	/f/
ϟ	GH	Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b, glyph:* N	/ɣ/
X	CH	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*	/x/
Δ	SHARP K	Homoródkarácsonyfalva, ca. 13th c., *Fig. 9.2.3-2b*	/k/
Ɩ	CIRCLE ENDED O	Vargyas Inscription, 12th-13th c., *Fig. 9.2.3-1b*	/o/
≲	OPEN OE	Székelydálya, around 1400, *Fig. 9.2.4-1, sound:* /y/ Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Rovash Calendar, 1690, *Fig. 9.2.6-4* Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8, glyph:* ⋛	/ø/ (*historically* /øː/y/yː/ *also*)
╱	SIMPLE R	Székelydálya, around 1400, *Fig. 9.2.4-1*	/r/
Ѱ	SCH	Portsalmi, 1655, *Fig. 9.2.8-7* Dobai Alphabet, 1753, *Fig. 9.2.9-5*	/ʃ/ (*historically also:* /ʒ/)
X	SHARP TY	Bögöz Inscription, 1480-1530, *Fig. 9.2.7-6*	/c/ (*before the 13th c. surely* /t/)
Ẍ	TRIPLE TY	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Kájoni, Ancient Alphabet, 17th c., *Fig. 9.2.8-9*	/c/ (*before the 13th c. surely* /t/)
Ꞁ	OPEN V	Bodrog, around 900, *Fig. 9.2.2-1, in a ligature* Székelydálya, around 1400, *Fig. 9.2.4-1*	/β/

Table 9.1.6-1: The historically used individual SHR graphemes

Even today, both X CH /x/ and Ѱ SCH /ʃ/ are useful in writing loanwords and Hungarian family names with grapheme combinations denoting special sound values (*Table 9.1.6-2*).

Type	Examples
Family names	*Fischer* HƷѰ†⊗, *Melich* X†ΛƷᗺ, *Schédl* Λ+ʖѰ, *Schéry* †HʖѰ, *Scheszták* ◊◁ΥǁƷѰ, *Schlág* Λ◁ΛѰ, *Schóber* HƷXӘѰ, *Schósz* ǀӘѰ
Loanwords in the Hungarian language	*architektúra* 4HЖΥOƷΥ†XH4 ‘architecture’, *mechanika* 4O†Ↄ4XƷᗺ ‘mechanics’, *pszichológia* 4†ΛӘΛↃX†ǁƎ ‘psychology’, *technika* 4O†ↃXƷΥ ‘technics’, *technológia* 4†ΛӘΛↃↃXƷΥ ‘technology’

Table 9.1.6-2: Use of some historical SHR graphemes in present-day orthography

9.1.7. Rovash Numerals

Since the same numerals were used in CBR as in SHR, their names are just “*Rovash Numerals*” without the attribute “*Szekely-Hungarian*” or “*Carpathian Basin*” (*Table 9.1.7-1*).

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[678] Németh & Olaszy 2010, p. 156

Glyph	Name	Examples of the glyph of the rovash numerals in relics and in publications
𐳺	ONE	Numeral Rovash Stick, Sepsiszentkirály, 19th– beg. of 20th c., *Fig. 9.2.10-8*
𐳺𐳺	TWO	Patakfalvi Bible, 1776–1785, *Fig. 9.2.9-8*
𐳺𐳺𐳺	THREE	Numeral Rovash Stick, Sepsiszentkirály, 19th– beg. of 20th c., *Fig. 9.2.10-8*
𐳺𐳺𐳺𐳺	FOUR	Numeral Rovash Stick of shepherds, 19th– beg. of 20th c., *Fig. 9.2.10-7*
𐳻	FIVE	Numeral Rovash Stick from Kiskunhalas, 19th c., *Fig. 9.2.10-6* Presentation of Tar in 1902[679]
𐳼	TEN	Numeral Rovash Stick, Sepsiszentkirály, 19th– beg. of 20th c., *Fig. 9.2.10-8*
𐳽	FIFTY	Numeral Rovash Stick from Kiskunhalas, 19th c., *Fig. 9.2.10-6*
𐳾	ONE HUNDRED	Numeral Rovash Sticks of shepherds, 19th– beg. of 20th c., *Fig. 9.2.10-7*
𐳻‍𐳾	FIVE HUNDRED	Bárczy: Rovash Textbook, 1971, *Fig. 9.2.11-5, slightly different glyph* Nagy: Rovash scripting software, 1997[680] Barta: Operations with rovash numerals, 2006[681] Rumi: Derivation of the glyph of 500 from other rovash numerals, 2008[682] Date Calculator of G. Kliha, 2010, *Fig. 9.2.12-18*
𐳿	ONE THOUSAND	Alphabet and Sample Inscriptions of Verpeléti Kiss, 1935, *Fig. 9.2.11-2b*

Table 9.1.7-1: SHR numerals and their examples in relics

9.1.8. Historical Szekely-Hungarian Rovash ligatures

The typographic ligatures of Szekely-Hungarian Rovash graphemes are widely used. *Table 9.1.8-1* presents some historical ligatures found in SHR relics and their earliest occurrences (using their RTL versions). These are usually not systematic, applied on occasion mainly for space-saving purposes. However, lately there is research[683] about the possible use of ligatures to systematically present the stems in the Hungarian language.

Glyph	Name	Examples of SHR historical ligatures in relics and publications
𐲀‍𐲂	AB	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
𐲀‍𐲇	AD	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
𐲀‍𐲖	AL	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
𐲀‍𐲙‍𐲦‍𐲀‍𐲖	ANTAL	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
𐲀‍𐲢	AR	Poem of Szamosközy against Emperor Rudolf II, 1604, *Fig. 9.2.8-1*
𐲀‍𐲤	AS	Csíkszentmiklós Inscr., 1501, copy: 1749, *Fig. 9.2.7-1 (partly worn glyph)*
𐲀‍𐲦‍𐲦	ATT	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
𐲁‍𐲢	AAR	Constantinople Inscription, 1515, *Fig. 9.2.7-4a, also:* 𐲁‍𐲢
𐲂‍𐲀	BA	Székelydálya Inscription, around 1400, *Fig. 9.2.4-1*

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[679] Sebestyén 1915, pp. 19–20

[680] Nagy, B. 1997

[681] Barta 2006, pp. 42–47

[682] Hosszú, Rumi, & Sípos 2009, pp. 191–193

[683] Sípos, László 2008–2011: *Personal communication*

Glyph	Name	Examples of SHR historical ligatures in relics and publications
	BD	Kájoni, Ancient Alphabet & Inscriptions, 1673, *Fig. 9.2.8-9*
	BE	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	BET	Alphabet by Bonyhai, 1627 and 1629, *Fig. 9.2.8-3*
	BI	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	BO	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	CAK	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, named "ECK"*
	CK	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	CSA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	CSAA	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	CSIN	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	DU	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	GA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	GE	Ligatures of Révai, 1803, *Fig. 9.2.10-1*
	GI	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	GO	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	HA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	HE	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	HI	Dési Alphabet, 1753, *Fig. 9.2.9-4*
	HO	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	IT	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	IIRT	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	LA	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	LAA	Székelydálya, around 1400, *Fig. 9.2.4-1*
	LE	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	LO	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	LT	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	NA	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	NC	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	NCS	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*
	ND	Relic of Kilyén, end of 15th – beg. of 16th c., *Fig. 9.2.5-4* Dálnok Inscription, 1526, *Fig. 9.2.7-5a, b, glyph:*
	NGY	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2, glyph:* Dési Alphabet, 1753, *Fig. 9.2.9-4*
	NI	Ligatures by Kájoni, 1673, with differing name (Sebestyén, 1909).
	NJ	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2* Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7b,c*
	NK	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	NT	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	OR	Poem of Szamosközy against Emperor Rudolf II, 1604, *Fig. 9.2.8-1*
	RA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*

Glyph	Name	Examples of SHR historical ligatures in relics and publications
	RCS	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	RE	Ligatures of Révai, 1803, *Fig. 9.2.10-1*
	RI	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	RO	Ligatures of Révai, 1803, *Fig. 9.2.10-1*
	RT	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	RU	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	SA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	SE	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	SI	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	SK	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	SM	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	SO	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	SP	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	ST	Székelydálya, around 1400, *Fig. 9.2.4-1*
	SZT	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	TI	Constantinople Inscription, 1515, *Fig. 9.2.7-4a*
	TYA	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	UL	Bologna Rovash Calendar, 1690 (earlier origin), *Sec. 9.2.6*
	UM	Poem of Szamosközy against Emperor Rudolf II, 1604, *Fig. 9.2.8-1*
	UR	Csíkszentmiklós Inscription origin: 1501, corrected in 1915, *Fig. 9.2.7-2*
	VAA	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	WNEE	Bodrog-Alsóbű Relic, about 900, *Sec. 9.2.2*
	ZA	Rudimenta by Telegdi, 1598, *Fig. 9.2.7-7a*
	ZR	Csíkszentmiklós Inscription, 1501, S. Szilágyi copied in 1749, *Fig. 9.2.7-1*
	ZT	Nikolsburg Alphabet, 15th c., *Fig. 9.2.5-2*

Table 9.1.8-1: The historical Szekely-Hungarian Rovash ligatures and their examples in relics

9.1.9. Sound length and the diacritical mark

Long vowels and consonants were not marked in historical Szekely-Hungarian Rovash inscriptions. However, in the contemporary Szekely-Hungarian Rovash, long vowels count as different graphemes and long consonants are marked by duplication, like the Latin-based Hungarian orthography. In the 18-19 centuries, duplication of the grapheme A /ɒ/ represented AA /aː/ in some relics (Patakfalvi Bible, 1776-1785, *Fig. 9.2.9-8*; Csíkszentlélek, after 1806, *Fig. 9.1.10-2*; Book of Áron Kova, prior to 1873, *Fig. 9.2.10-5*). However, a combining diacritical mark of duplication was used in some Szekely-Hungarian Rovash relics (*Table 9.1.9-1*).

Glyph	Name of the diacritical mark	Origin of the glyph
⌟	COMBINING MACRON-ACUTE (as a duplicating mark)	Book of Kova, prior to 1873, *Fig. 9.2.10-5* Verpeléti Kiss, 1932–1935, *Fig. 9.2.11-2b, slightly differing glyph*

Table 9.1.9-1: Combining diacritical mark used in SHR

9.1.10. Punctuation

Szekely-Hungarian Rovash applies the usual European punctuation marks and their reversed versions due to its bidirectional feature. The boustrophedon-directed Szekely-Hungarian Rovash texts use both RTL and LTR punctuation marks. *Table 9.1.10-1* presents the use of some Szekely-Hungarian Rovash punctuation marks.

Glyph	Name of the rovash punctuation mark	Usage in texts	Examples of the glyph in relics and in publications
⋘	BEGINNING MARK RIGHT	RTL	Verpeléti Kiss, 1933, *Fig. 9.2.11-2a*
⋙	BEGINNING MARK LEFT	LTR	Verpeléti Kiss, 1935, *Fig. 9.2.11-2b*
⹁	REVERSED COMMA	RTL	Letter of K. G., 1770, *Fig. 9.2.9-7*
⹂	DOUBLE LOW-REVERSED-9 QUOTATION MARK	RTL, as a beginning quotation mark	A page of Vér's book, *Fig. 9.2.12-1*
‟	DOUBLE HIGH-REVERSED-9 QUOTATION MARK	RTL, as an ending quotation mark	A page of Vér's book, *Fig. 9.2.12-1*
•	WORD SEPARATOR MIDDLE DOT	LTR and RTL, as a word separator	Constantinople Relic, *Fig. 9.2.7-4a* Lord's Prayer of Bél, *Fig. 9.2.9-1*
=	DOUBLE HYPHEN	RTL as a historical hyphen	Rudimenta, 1598, *Fig. 9.2.7-7a* Lord's Prayer of Bél, *Fig. 9.2.9-1*
‟	DOUBLE COMMA-LIKE HYPHEN	RTL as a historical hyphen	Letter of "K. G.", 1770, *Fig. 9.2.9-7* Nagybánya, *Fig. 9.2.10-4*
×	WORD SEPARATOR CROSS	LTR and RTL, as a word separator	Manual for scouts, *Fig. 9.2.12-4* Wood carving, *Fig. 9.2.12-14*
+	WORD SEPARATOR VERTICAL CROSS	LTR and RTL, as a historical word separator	Homoródkarácsonyfalva, ca. 13th c., *Fig. 9.2.3-2b*
⁝	TRICOLON	LTR and RTL, as a word separator	Verpeléti Kiss, 1935, *Fig. 9.2.11-2b* Markolt, 2005, *Fig. 9.2.12-5*
⁞	VERTICAL FOUR DOTS	LTR and RTL, as a word separator, comma, or full stop	Csíkszentmiklós, *Fig. 9.2.7-1* Verpeléti Kiss, 1935, *Fig. 9.2.11-2b* Votive Document, *Fig. 9.2.11-3*
:	COLON	LTR and RTL, as a word separator	Rudimenta, 1598, *Fig. 9.2.7-7a* Rovash Calendar, *Fig. 9.2.6-11*
-	HYPHEN-MINUS	LTR and RTL, as in the modern European scripts	Verpeléti Kiss, 1935, *Fig. 9.2.11-2b* Votive Document, *Fig. 9.2.11-3*
.	FULL STOP	LTR and RTL	Kájoni, 1673, *Fig. 9.2.8-9*
⁑	DOUBLE CROSS FULL STOP	LTR and RTL	Manual for scouts, *Fig. 9.2.12-4* Wood carving, *Fig. 9.2.12-14*

Glyph	Name of the rovash punctuation mark	Usage in texts	Examples of the glyph in relics and in publications
×××	END OF MESSAGE MARK	LTR and RTL	Verpeléti Kiss, 1935, *Fig. 9.2.11-2b* Manual for scouts, *Fig. 9.2.12-4*

Table 9.1.10-1: Examples of the Szekely-Hungarian Rovash punctuation marks

9.1.11. Casing

Since the beginning of the 17th century, use of casing has been sporadic, but its frequency has increased in the last decades. Casing became common with the mass production of printed and digital content in Szekely-Hungarian Rovash.

Traditionally, upper-case rovash graphemes differ only in size. However, now, stylistic modification on the font design level helps with the readability of lower- and upper-case graphemes.[684] *Fig. 9.2.12-13b* shows an example of the stylistic modification method.

9.2. Szekely-Hungarian Rovash relics and publications

9.2.1. Introduction to the history of Szekely-Hungarian Rovash

In the following, the Szekely-Hungarian Rovash relics and key publications are presented chronologically to serve as a reference basis for research. The number of surviving relics from the earliest times is relatively small, since mostly wood was used as a substrate material for rovash inscriptions. Since the 15th century, more and more paper-based relics have survived. The longest relic, the Bologna Rovash Calendar, is discussed in an individual section, due to its large size and its rich linguistic, paleographic ties.

9.2.2. The 9th–10th centuries

Bodrog-Alsóbű: This relic from around 900 in *Fig. 9.2.2-1* was found in Bodrog Village in Somogy County (Hungary) by archaeologist K. Magyar on the 24th of March 1999.[685] This location is currently called Alsóbű Farmstead, which is a part of Bodrog Village. The medieval name of the village survived as *Bew* /bøː/ written in the Latin-based Old Hungarian orthography (*Table C-2*). J. Gömöri, secretary of the Industry–Historical Committee of the Hungarian Academy of Sciences, also examined the relic.[686] Archaeologist–historian I. Erdélyi pointed out that the signs on the surface of the clay twyer fragment were made by fingernails.[687] The size of the relic is 6.2 cm x 4.2 cm, its thickness 1.2 cm.

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[684] Rumi, Sípos, & Somfai 2009

[685] Magyar 1999

[686] Gömöri 1999

[687] Erdélyi 2000, p. 93; 2010

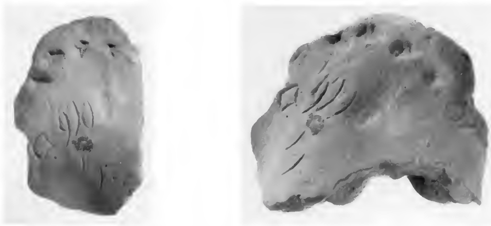

Figure 9.2.2-1: The Clay Twyer Fragment from Bodrog-Alsóbű (West Hungary, around 900), photograph of Miklós Lantos[688]

Archaeologist–historian Vékony transcribed the inscription first;[689] however, this transcription was debated by linguists.[690] In 2010–2011, the author of this book improved the transcription, based on personal communication with linguists K. Korompay and E. Zelliger.[691] The author realized in 2011 that the third symbol 𐲙‍𐲁‍𐲯 from right is not only the ligature of 𐲙 N /n/, and 𐲁 AA /eː/ as was explored by Vékony, but also contains the 𐲯 OPEN V /β/. However, the upper part of the vertical line of the 𐲯 OPEN V /β/ is missing,possibly because this part was weaker than the others and it was worn down. Note that the relic was used in a smelting-furnace, evidenced by the iron spot melted onto its surface (see the darker part in the middle of the pictures in *Fig. 9.2.2-1*). Another possible reason was that this vertical line was originally left out when the maker realized that the text does not fit on the end of the twyer, and therefore created a ligature based on the already-drawn two parallel slanting lines of the 𐲯 OPEN V /β/. The ligature modified the direction of the row and therefore the 𐲓 K /k/ is lower on the row of the first part of the word (from the right).

The text of the inscription is in Hungarian of the Ancient linguistic period. The transcription of the relic is presented in *Table 9.2.2-1*. As Zelliger stated in 2011, this improved transcription is linguistically and semantically correct.[692]

Written with Szekely-Hungarian Rovash font	𐲌𐲪𐲙‍𐲁‍𐲯𐲓
Written with normalized SHR font, without ligatures	𐲌𐲪𐲯𐲙𐲁𐲓
IPA phonetic transcription	/fuβneːk/
Translation from Hungarian	‘I'd like to blow [the fire for melting iron]’

Table 9.2.2-1: Transcription of the Bodrog-Alsóbű Relic

9.2.3. The 13th century

Vargyas: A rovash inscription was found by Pastor Ferenc Andorkó in Vargyas Village (Szekelyland, Romania, see *Map 7.2-1*) on a stone in a church (*Fig. 9.2.3-1a,b*) in 1994.[693] Its transcription was made by Vékony and improved by Zelliger (*Table 9.2.3-1*).[694]

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[688] Magyar 2001

[689] Vékony 1999a; Vékony 1999b

[690] Riba 2000, pp. 80–84

[691] Korompay, Klára 2010–2011: *Personal communication*; Zelliger, Erzsébet 2010–2011: *Personal communication*

[692] Zelliger, Erzsébet 2010–2011: *Personal communication*

[693] Benkő E. 1994b, pp. 487-489; B. Kovács 1994, p. 1

[694] Vékony 2004a, p. 22; Zelliger, Erzsébet 2010–2011: *Personal communication*

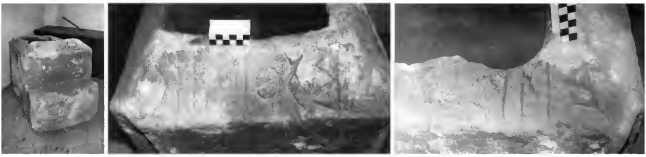

Figure 9.2.3-1a: Photographs of the Vargyas Relic, 12th-13th centuries[695]

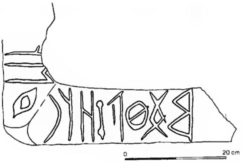

Figure 9.2.3-1b: The authentic drawing of the Vargyas Inscription[696]

Written with typed Szekely-Hungarian Rovash font	𐳘𐳋 𐳌𐳐𐳛𐳍 𐳨 𐳙𐳓𐳮𐳇
IPA phonetic transcription	/ˈmeː fioɣ tᵉ nᵋkyd/
Translation from Hungarian	'[Woman,] here is your Son'

Table 9.2.3-1: Transcription of the Vargyas Inscription

The sentence was cited from the *Gospel of John*:[697] "*Woman, behold your son*". G. Ferenczi supposed that the relic served as a support for a statue.[698] However, archaeologist E. Benkő proved that the original function of the relic was a baptismal font.[699]

The settlement of the Szekelys in this area was completed in the mid-12th century, according to L. Benkő.[700] This heavy stone was obviously not carried from a remote place; more likely, it was carved after the settlement of the Szekelys in Vargyas. According to E. Benkő, the stone inscription was made about the 13th-14th centuries.[701] According to linguist Zelliger, the text of the inscription was probably a widely known phrase at the time of carving, and the text could not have been created later than the 12th-13th centuries, and maybe even earlier.[702] Zelliger pointed out that prayers usually kept their original expressions.[703] She claimed that the Szekely-Hungarian Rovash text of the Vargyas Inscription resembles a Greek translation of the Bible.[704] Presumably, the text was a widely known translation of the Biblical sentence.[705]

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[695] Benkő, E. 1996c, p. 79
[696] Benkő, E. 1996c, p. 79
[697] Ioh 19:26
[698] Ferenczi 1997, pp. 19–20
[699] Benkő E. 1994b, p. 487
[700] Benkő, L. 1990, pp. 109–122; Benkő, L. 1991a
[701] Benkő E. 1996b, pp. 31-33
[702] Zelliger 2012
[703] Zelliger 1994, pp. 214–215
[704] Zelliger, Erzsébet 2010–2011: *Personal communication*; Bencze 1991, pp. 84–88
[705] Zelliger, Erzsébet 2010–2011: *Personal communication*

The text contains the Szekely-Hungarian Rovash grapheme ϟ GH /ɣ/. In the 11th century, /ɣ/ neared extinction in the Hungarian language; however, sometimes it remained in written texts.[706] The use of /ɣ/ in this relic may show a strong archaism, using an earlier state of the Hungarian language. Linguist Korompay claimed that after the 11th century, the use of /ɣ/ became very rare, but the diphthongs developed from /ɣ/ frequently occur in the Latin-based Hungarian sources.[707] To summarize the arguments above, the language of text on the Vargyas Relic is no later than the 10th–11th centuries.

The vowels /i/, /e/, and /ɛ/ were left out from the text in *Table 9.2.3-1*, as was usual in stone-inscriptions of that time. The existence of the first word /^{i}meː/ in the relic's time is proved by Hungarian linguistics.[708] The glyph of 𐲊 CLOSED E /e/eː/ in the inscription is 𐲏, the direct ancestor of 𐲏 H /h/. At the time of the text, there was no /h/ sound in the Hungarian language; therefore, the symbol 𐲏 may not mean /h/.

The grapheme 𐲮 V was used for /y/, demonstrating the earliest use of this Szekely-Hungarian Rovash grapheme. The 𐲦 T was used in the text for representing both /d/ and /t/, which proves that 𐲦 T was the original glyph and 𐲇 D /d/ appeared later—surely as a glyph variant of 𐲦 T (*Table 3.6.4-1*). Aspects of the 𐲌 DIAGONAL F /f/ and the 𐲛 CIRCLE ENDED O /o/ are presented in *Sec. 3.6.3* and *Sec. 3.7.2*, respectively.

Earlier attempts at transcribing the Vargyas Relic reads: /m^{i}h^{aː}ly iːrt^{aː}n k^{ø}v^{ε}t/ 'Michael wrote [the] stone'[709] and /m^{i}h^{aː}lyi s^{ilvεs}t^{ε}r t^{øː}n k^{ø}v^{ε}t/ 'Sylvester Mihályi did [the] stone'.[710] However, these solutions are questionable for several reasons: (*i*) These transcription presume that the long vowels were not written in two words (/m^{i}h^{aː}ly/ and /iːrt^{aː}n/ or /t^{øː}n/ in the second earlier transcription). These solutions contradicts the medieval Szekely-Hungarian Rovash relics, in which the long vowels were usually written, unlike the frequently skipped short vowels (*Rule 2* in *Table 3.1-6*).[711] (*ii*) The first transcription cannot interpret the symbol 𐲛 CIRCLE ENDED O and ignores it. Another version of this earlier attempt is /m^{i}h^{aː}ly j : ^{iː}rt^{aː}n k^{ø}v^{ε}t/, which interprets the 𐲛 CIRCLE ENDED O as a *colon* (:). However, the two endpoints of the sign are clearly connected. (*iii*) Linguistically, the whole expression of the older transcription is very unlikely at the time of the Vargyas Relic.[712] These transcriptions are surely erroneous.

Homoródkarácsonyfalva: The church of this village (*Map 7.2-1*) has a stone carving, dating back to about the 13th century.[713] Photographs are presented in *Fig. 9.2.3-2a* and *b*, the drawing in *Fig. 9.2.3-2c*.

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[706] Korompay, Klára 2010–2011: *Personal communication*

[707] Korompay, Klára 2010–2011: *Personal communication*

[708] D. Mátai 2003b, p. 402

[709] Ráduly 1994

[710] Kósa 1994, pp. 153; Kósa 2008, pp. 73-80

[711] Sándor 1991; Vékony 2004a, p. 19

[712] Zelliger, Erzsébet 2010–2011: *Personal communication*

[713] Németh 1945; Benkő, E. 1996b: 31-33

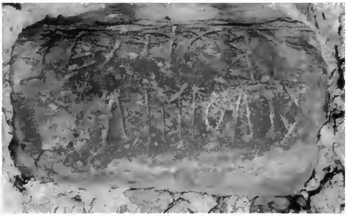

Figure 9.2.3-2a: The Stone Inscription from Homoródkarácsonyfalva (ca. 13th c.)[714]

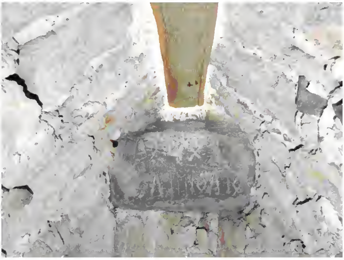

Figure 9.2.3-2b: Part of the wall with the stone of the Inscription in Homoródkarácsonyfalva[715]

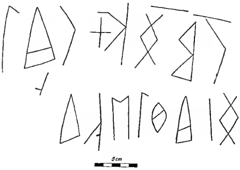

Figure 9.2.3-2c: The drawing of the Stone Inscription of Homoródkarácsonyfalva[716]

The transcription of the inscribed text: *first row:* ΓΔ) +)I⧖ ᐊ) /nᵋm hⁱsᵋn + nᵋki/ *second row:* Δ)MΓθ ΔI⧖ /hⁱsᵋk fiuːnᵋk/.[717] The sound value of Δ) /nᵋk/ was determined by E. Zelliger.[718] Its translation is: '*He does not believe + Him \ I believe Son.*' The sentence is cited from the *Gospel of John.*[719] Note that the inscription is a fragment of a longer text inscribed on multiple stones.

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[714] Benkő, E. 1996b: 31-33

[715] Ráduly 2008a

[716] Ferenczi 1979; Ferenczi 1992, p. 56

[717] Vékony 2004a, pp. 9–16, pp. 111–114

[718] Zelliger, Erzsébet 2010–2011: *Personal communication*

[719] Ioh 3:18

In the inscription, the symbol Ⲙ has to denote a vowel, because a short vowel (Γ J /i/) was written next to it. If Ⲙ were to denote /v/ instead of a vowel, it would be unnecessary to write Γ /i/ between the consonants 0 and Ⲙ.[720] It was necessary to write the Γ J /i/ in order to denote the existence of the sound /i/ between /f/ and /uː/. The word /fiuː/ means 'son'.

The inscription includes special graphemes: the + WORD SEPARATOR VERTICAL CROSS, the Δ SHARP K /k/, the 0 DIAGONAL F /f/, and the mirrored glyph of 1 J /i/. See *Table 3.6.3-1* about the origin of the 0 DIAGONAL F. The orthography of the text is obviously less archaic than that of the Vargyas Inscription.

Korond: Two stones with the SHR graphemes ſ and IY, dating back to the turn of the 13th century, were found in the excavation of Firtos Peak (near Korond, Szekelyland, Romania).[721] The transcription of ſ is probably /i/ or /j/, and IY is /t^{aː}s/ according to G. Ferenczi, /t^{u}s/ according to J. Ráduly. The meaning of IY was probably a personal name or a monogram. The significance of this relic is the proof of the existence of these graphemes in that time.

9.2.4. Around 1400

In **Székelydálya** (*Map 9.2.5-1*), one of the longest Szekely-Hungarian Rovash relics was discovered by Á. Balázs and G. Ferenczi in 1992, and by E. Benkő in 1995.[722] The inscription was examined by Gy. Györffy and J. Harmatta as well.[723] The inscription is from around 1400 according to E. Benkő;[724] *Fig. 9.2.4-1* presents its drawing.[725] There is no widely accepted transcription yet for the whole inscription, since it is damaged. However, some words are readable. For instance, in the first row, there is a personal name: ΛⲘҲ†⊗⟋… ⅄ƷƎ /peːt[e]rfi balaːʒ/,[726] where /balaːʒ/ is the Hungarian version of the Christian name *Blasius*. Note that the sound /r/ was denoted by the ⟋ SIMPLE R and not the H R; moreover, the sound /ʒ/ was denoted by Λ S, like the Latin-based Old Hungarian orthography (see *Table 3.6.6-1*). Ligatures were extensively used in the relic, e.g. Ҳ BA /ba/ and Ⲙ LAA /laː/. In the third row, there is an example of the reptile-like symbol ϒ ENT as well. Finally, in the right part of the third row, the SHR ꞁ OPEN V appears in the word ꞁ⟩⅄ǁ /^{ε}st^{ε}nd^{ε}β/, which is an archaic form of the present-day /^{ε}st^{ε}ndøː/ 'year'.[727]

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[720] Vékony 2004a, pp. 15–16

[721] Ferenczi 1990, p. 18; Ráduly 2003, pp. 12–13; Ráduly 2008a, pp. 17–19; Erdélyi & Ráduly 2010, p. 92

[722] Ferenczi 1994; Benkő, E. 1996c

[723] Györffy & Harmatta 1997, p. 152

[724] Benkő E. 1996b, pp. 31-33

[725] Ráduly 2000a, p. 5; Ráduly 2000b, p. 4

[726] Györffy & Harmatta 1997, p. 152

[727] Zelliger, Erzsébet 2010–2011: *Personal communication*

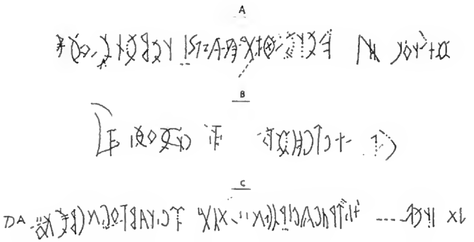

Figure 9.2.4-1: The drawing of the Székelydálya Inscription made by J. Ráduly (around 1400)

Berekeresztúr: There are several rovash inscriptions in the Reformed Church of Berekeresztúr (Szekelyland, Romania) from the end of the 14th to the 15th centuries. Though these inscriptions are partly undeciphered,[728] they attest to the existence of some SHR graphemes in that period, e.g.: 𐲀 A, 𐲇 D, 𐲍 G, 𐲓 K, 𐲖 L, 𐲘 M, 𐲙 N, 𐲣 SIMPLE R, 𐲤, 𐲤 S, 𐲥 SZ, 𐲦 T, 𐲪 U, 𐲝 CLOSED OE-UE, 𐲭 OPEN UE, and 𐲰 ZS.

9.2.5. The 15th century

Székelyderzs: There is an important Szekely-Hungarian Rovash relic from between the second half of the 15th and the first third of the 16th centuries[729] that was scratched into a brick prior to burning. Now, it is in a church of Székelyderzs Village (Szekelyland, Romania, see *Map 9.2.5-1*). *Fig. 9.2.5-1* presents the photograph of the brick and the drawing of the inscription. The partly deciphered transcription is /mˈkloːʃ ^{3}nt^{3}d ^{3}p p^{o}p/ 'Nicolas … priest'. According to Zelliger, the /ntd/ consonant-cluster was not probable; therefore, in the undeciphered middle part of the relic, an undefined vowel /3/ was supposed in two cases (see the transcription above).[730] The short vowels in the inscription are not written according to the rovash orthographical rules of that time (*Table 3.1-6*).

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[728] Erdélyi & Ráduly 2010, pp. 67–77

[729] Jakubovich 1932, pp. 264–274; Csallány 1960, p. 39; Benkő, E. 1997, pp. 180; Erdélyi & Ráduly 2010, p. 98

[730] Zelliger, Erzsébet 2010–2011: *Personal communication*

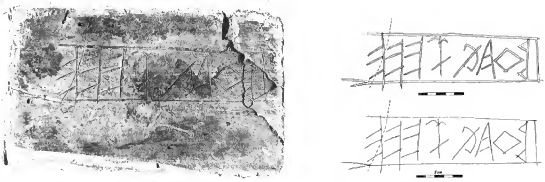

Figure 9.2.5-1: Brick Inscription from Székelyderzs (15th-16th centuries). The photograph was taken by E. Benkő,[731] and the drawing was made by G. Ferenczi.[732]

Nikolsburg Alphabet: There are theories that in the court of the great Hungarian Renaissance ruler, King Matthias (*App. B*), SHR was fashionable. The *Map 9.2.5-1* shows the empire of King Matthias and denotes the locations where Szekely-Hungarian Rovash relics were found between the 14th and 16th centuries.

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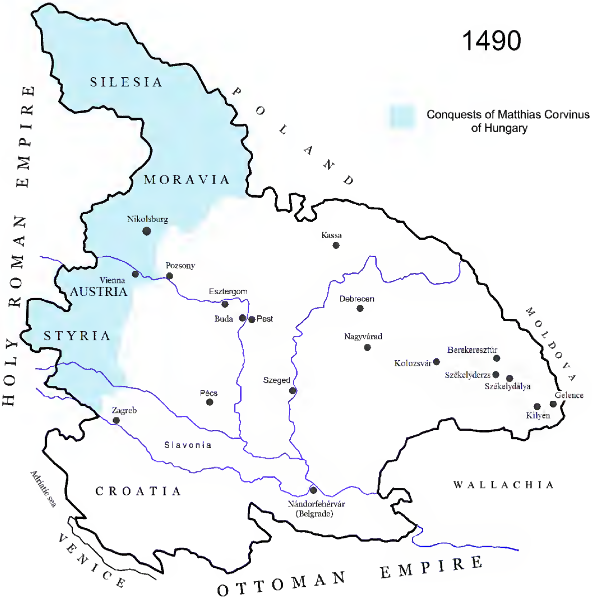
[731] Benkő, E. 1994, pp. 157–168

[732] Ferenczi, G. & Ferenczi, I. 1979, pp. 15–18



Map 9.2.5-1: Empire of King Matthias with locations of SHR finds of the 14th–16th centuries[733]

One important Szekely-Hungarian Rovash relic is the Alphabet of Nikolsburg (*Fig. 9.2.5-2*).[734] The alphabet was found in a book in the castle of Nikolsburg (present-day Mikulov, Czech Republic).[735] Gy. Németh dated the inscription to the middle of the 15th century based on the paleography of the Latin sentences and the names of the months on the bottom of the sheet.[736] R. Dán examined the Hebrew alphabet and the list of the months, and he concluded that the relic is from the second half of the 15th century.[737] The location where the relic was created is undetermined.[738]

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[733] Wikimedia Commons, website, *http://upload.wikimedia.org/wikipedia/commons/4/42/Map_of_Hungary_in_1490.png*, extended
[734] Németh 1934, pp. 3–4
[735] Róna-Tas 1995, p. 271
[736] Németh 1934, p. 3
[737] Róna-Tas 1995, p. 141
[738] Vékony 2004a, pp. 88–89

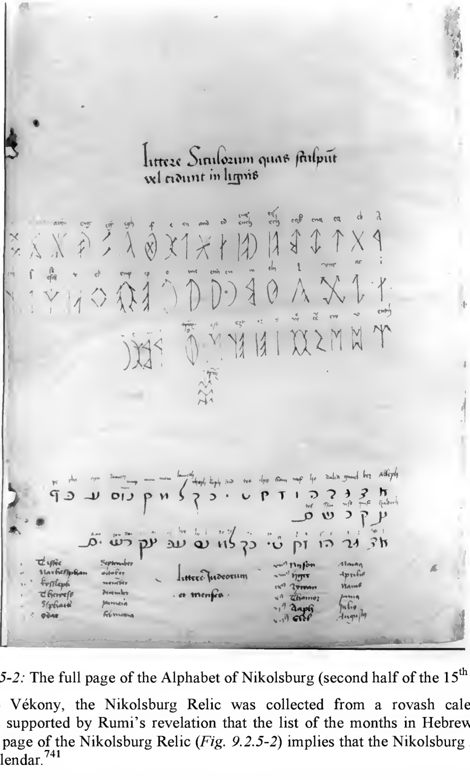

Figure 9.2.5-2: The full page of the Alphabet of Nikolsburg (second half of the 15th century)[739]

According to Vékony, the Nikolsburg Relic was collected from a rovash calendar.[740] This assumption is supported by Rumi's revelation that the list of the months in Hebrew script at the bottom of the page of the Nikolsburg Relic (*Fig. 9.2.5-2*) implies that the Nikolsburg Alphabet was related to a calendar.[741]

The Nikolsburg Alphabet more-or-less follows the grapheme order of the Latin alphabet, including the special graphemes used for representing all the Hungarian sounds (*Table 9.2.5-1*). In its first row, 𐲦 TRIPLE TY /c/ resides after (in RTL direction) *eǵ* 𐲍 GY /ɟ/ and *eng* Ð NGY /ng/, and not near 𐲥 T /t/, as would be reasonable based on its Latin name. The only reason could be that the writer of the alphabet realized the sound values of /c/ and /ɟ/ are close to each other (both are palatal plosives); their only difference is that /ɟ/ is voiced and /c/ is voiceless. The grapheme-name

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[739] Photo: National Széchényi Library

[740] Vékony 2004a: 96

[741] Rumi, Tamás 2008–2011: *Personal communication*

'*echech*' of 𐲩 in the first row possibly originated from the Latin grapheme-name *hakka* (Italian *acca*, French *ache*).[742] In the second row, the location of 𐲰 ZS /ʒ/ just before 𐲤 S /ʃ/ (in RTL direction) shows that earlier the pronunciation of these two graphemes had been the same (most probably /ʃ/).

The 𐲔 OPEN K /k/ is located in the place of Latin *K* and the 𐲓 K /k/ is in the place of Latin *Q*. It is noteworthy that the phoneme /q/ never existed in the Hungarian language.[743] In the earliest Old Latin orthography, the Latin graphemes *C*, *K*, and *Q* were all employed for both /k/ and /g/. Later, the *G* was invented from *C* with a diacritic. The choice of grapheme in the Old Latin orthography was determined by the following vowel: *C* stood before front vowels and consonants, *K* before *A*, and *Q* before rounded vowels. Later, the use of *C* replaced most usages of *K* and *Q*.[744] In the Nikolsburg Alphabet, the possible reason for putting the SHR 𐲓 K /k/ in the place of *Q* was only the topological parallelism between the close-shaped Latin *Q* and the SHR 𐲓, like the open-shaped Latin *K* and the SHR 𐲔 OPEN K.

Name in the relic	eh	echech	athÿ	eng	eǵ	egh	f	e	eÿ	and	ed	encź ench	ecź ech	eczk	encz	ecz	eb	a
SHR glyph	𐲏	𐲩	𐲨	Ð	𐲎	𐲍	𐲌	𐲉	𐲒	𐲈	𐲇	ꟼ	𐲆	⇞	𐲅	𐲄	𐲂	𐲁
IPA	h	x	c	ng	d͡ʒʲ/ɟ	g	f	ɛ	j	nd	d	nt͡ʃ	t͡ʃ	t͡sk	nt͡s	t͡s	b	ɒ
Current name	H	CH	TRIPLE TY	NGY	GY	G	F	E	J	AND	D	NCS	CS	CAK	ENC	C	B	AA
Name in the relic		eth	ſ	ſs eſch	r	ek	emp	ep	o	nÿe	enÿ	en	m	ely	l	vnc	ac	i
SHR glyph		𐲦	𐲤	𐲰	𐲢	𐲓	𐲡	𐲠	𐲛	Ɗ	𐲚	𐲙	𐲘	𐲗	𐲖	𐲕	𐲔	𐲐
IPA		t	ʃ	ʒ	r	k	mp	p	o	nj	ɲ	n	m	ʎ	l	nk	k	i
Current name		T	S	ZS	R	K	EMP	P	O	NJ	NY	N	M	LY	L	UNK	OPEN K	I
Name in the relic			n	e	em	a		ꝯ	tprꝭ	eſt	eȝt	eȝ	s	wͤ	eě	ew	v	enth
SHR glyph			𐲙	𐲉	𐲘	𐲀		𐲲	丰	λ	ᚻ	𐲯	𐲥	𐲬	𐲞	𐲮	𐲪	𐲧
IPA			n	ɛ	m	a		ʃ	*nɒp	ʃt	zt	z	s	y	ø	v	u	nt
Current name			N	E	M	A		US	TPRUS	ST	ZT	Z	SZ	CLOSED OE-UE	OPEN OE	V	U	ENT

Table 9.2.5-1: The transcription of the Nikolsburg Alphabet

The symbol 丰 TPRUS is a cognate of 羊 NAP /nop/ in Ancient Alphabet by Kájoni, see *Fig. 9.2.8-9*. There is the only one survived example of the 丰 TPRUS, in the Nikolsburg Alphabet, see *Fig. 9.2.5-2*. Its letter name can also be read in the Nikolsburg Relic above the symbol 丰 in an abbreviated form: *tprꝭ*, and there is the mark of abbreviation above the name *tprꝭ* showing that a nasal letter was omitted from the name, in this case the *m*.[745] However, the last symbol in the letter name *tprꝭ* is still uncertain. According to Máté, the leftmost abbreviation (ꝭ) means *us*,[746] and the origin of the *tprꝭ* is *temperius*, which means 'earlier'. However, according to Vékony, the meaning of the abbreviation is *is*, and the original word could be the Latin *temporis*, which is the Latin *tempus* 'period of time' in genitive case.[747] According to Vékony, this letter name is the translation of the Hungarian word *nap*. Its background is that in Hungarian the word *nap* means 'day', but it had another meaning 'period of time', e.g. the Hungarian *hónap* 'month' < *hold* 'moon' + *nap* 'day.'[748] In this composition, the word *nap* means a period of time.

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[742] Vékony 1987a, pp. 106–107; Vékony 2004a, pp. 108–109

[743] Kiss & Pusztai 2003, *passim*

[744] Sihler 1995, p. 21

[745] Máté 2001, p. 189

[746] Máté 2001, p. 189; Máté, Zsolt (CSc in Architecture) 2013: *Personal communication*

[747] Lewis & Short 1985; Vékony 2004a, p. 105

My opinion is that another example of the abbreviation of *us* can be found in the Nikolsburg Relic: this is the letter name of the symbol 𐳲, see *Fig. 9.2.5-2*. This is probably means *us*. It is noteworthy that the meaning of the symbol ꝯ is *con-* or *com-* in the beginning of the words.[749] However, in this case, there is no any letter following the symbol ꝯ; consequently, the meaning of the ꝯ is *us*. Oppositely of the letter name of the symbol 𐳲, in the letter name of TPRUS (*tprꝭ*), the symbol ꝭ is used, which is different from the symbol ꝯ. Moreover, there is crossed out version of the *tprꝭ* above the symbol 𐳲, see *Fig. 9.2.5-2*. In this strikethrough word, the same symbol (ꝭ) is used as it can be found above the symbol TPRUS. Since these examples of the symbol ꝭ consequently differ from the symbol ꝯ, it is very probably that their meanings are also different. According to the literature, the symbol ꝭ could be read as *is* also.[750] Thus, the probable origin of the word *tprꝭ* was the Latin *temporis*. However, after finding the Nikolsburg Relic in the first half of the 20th century, it was read as *tprus* and this version remained in use.[751] Therefore, the grapheme name of remained TPRUS.

The most important fact is that the relics, in which the symbols NAP /nop/, TPRUS, or TPRU meaning period were found, are related to the subsequent copies of the Rovash Calendar.[752] However, later the original meaning of these symbols was lost and their descendant symbols denoted consonant-pairs only: 𐳡 EMP /mp/, NB /nb/mb/, MB /mb/, and 𐳃 AMB /mb/. It is noteworthy that the /n/~/m/ alternation was a Hungarian linguistic feature.[753]

In the Nikolsburg Alphabet, 𐳲 US was named by mistake as *tprꝭ* first, later the writer of the alphabet named TPRUS as *tprꝭ*; in the word *tprꝭ* there is a medieval abbreviation, see *Fig. 9.2.5-2*. However, the glyphs of the 𐳲 US and the TPRUS are totally different topologically. According to the author of this book, the only one possible reason for the mistake was that the writer of the Nikolsburg Alphabet knew TPRU. Consequently, the Nikolsburg Rovash Relic gives a link between TPRUS and TPRU, which supports the genealogical model above.

Another interesting feature of the Nikolsburg Relic is that the shape of 𐳘 M /m/ in the word 𐳀𐳘𐳉𐳙 /aːmɛn/ in the third row significantly differs from the shape of the letter 𐳘 M /m/ in the second row (*Table 9.2.5-1*). Both shapes are used in the SHR orthography of that time; however, the form 𐳘 M /m/ was less frequent. The two glyph-variants clearly show different styles; therefore, it is possible that the word 𐳀𐳘𐳉𐳙 /aːmɛn/ was *copied* from a different Christian Szekely-Hungarian Rovash text.

According to linguist-dialectologist E. Zelliger, the consonant names in the Nikolsburg Alphabet were never identical to the Hungarian letter-names, and they did not preserve any Hungarian linguistic tradition. As she stated, these consonant names were surely erroneous.[754] Some Szekely-Hungarian Rovash alphabets—indirectly related to the author of the Nikolsburg Alphabet, according to Vékony[755]—followed these consonant names. However, the clear majority of the Szekely-Hungarian Rovash alphabets applied the usual Hungarian letter names, including the most archaic Szekely-Hungarian Rovash alphabet, the Ancient Alphabet by J. Kájoni (*Figure 9.2.8-9*).

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[748] TESz; Bárczi 1994

[749] Manuscript and Special Collections website: article: Letter forms and abbreviations

[750] Manuscript and Special Collections website: article: Letter forms and abbreviations

[751] Németh 1934

[752] Vékony 2004a, p. 96

[753] Benkő, L. 2001, pp. 7–68

[754] Zelliger, Erzsébet 2010–2011: *Personal communication*

[755] Vékony 2004a, pp. 60-108

Gelence: There is a mural inscription in Gelence Village (Szekelyland, Romania, see *Map 9.2.5-1* and *Fig. 9.2.5-3*).[756] Its transcription is 𐳠𐳀𐳖 𐳠𐳛𐳠 /paːl pop/ 'Paul priest'. The year of the relic, 1497 was written in medieval-style Arabic numerals.

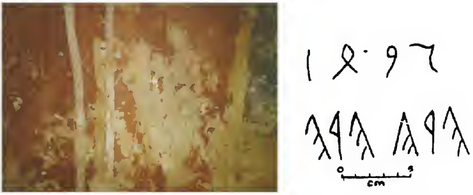

Figure 9.2.5-3: Mural Inscription from Gelence Village (1497)

Kilyén (Sepsikilyén): In 1976, Ádám Kónya discovered the Rovash Inscription of the Reformed Church of Kilyén (Szekelyland, Romania, see *Map 9.2.5-1*). It was first published by J. Ráduly in 1993.[757] The left symbols are blurred (*Fig. 9.2.5-4*). From the right, the second and fourth symbols are ligatures. According to Ráduly, its probable transcription is /b$^{\varepsilon}$ndikoː/ or /b^{aː}ndikoː/. The personal name *Bandikó* is well known in Transylvania.

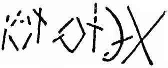

Figure 9.2.5-4: Relic of Kilyén from the end of the 15th to beg. of the 16th centuries[758]

9.2.6. The Bologna Rovash Relic (17th c. copy of a 15th c. stick calendar and an SHR alphabet)

A) General description

Luigi Ferdinando Marsigli (1658–1730), Italian soldier and naturalist, and another unknown person made in 1690 an authentic copy of an SHR calendar carved into a wooden stick which was later lost.[759] Marsigli's manuscript was found in Bologna.[760] The text of the Bologna Rovash Calendar is one of the most important Szekely-Hungarian Rovash legacy documents.[761] The main parts of the relic are the following: (*i*) the list of the feasts of Saints, (*ii*) the list of Biblical names related to Jesus Christ, and (*iii*) the list of titles of fundamental prayers. Marsigli's manuscript, a Szekely-Hungarian Rovash alphabet was also found; however, this very probably was not part of the rovash calendar.[762] According to the author of this book, the alphabet was surely not part of the rovash calendar, based on their differences in the glyphs and sound values.

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[756] Kónya 1994; Libisch 2004; Sándor 1996b, pp. 80–82

[757] Ráduly 1993, pp. 4–5

[758] Ráduly 1995, p. 35

[759] Marsigli 1744; Veress 1906: 109-130, 211-231; Sándor 1991

[760] Beliczay 1881

[761] Róna-Tas 1985–1986

[762] Sándor 1991; p. 37

According to Vékony, the rovash calendar copied by Marsigli was probably part of the heritage of the Franciscan friar J. Kájoni, who died in 1673. The alphabet in Marsigli's manuscript (*Fig. 9.2.6-4*) is similar to the Ancient Alphabet by Kájoni (*Fig. 9.2.8-9*).[763] Moreover, the Alphabet of Nikolsburg (*Fig. 9.2.5-2*) is probably also related to the Bologna Rovash Calendar based on the symbol 丰 TPRUS (*Sec. 3.6.4/B*). The 丰 TPRUS surely denoted the period of time, similar to the 爻 NAP 'day' in the Ancient Alphabet by Kájoni (*Sec. 3.6.4/B*).

Another strong link between the Nikolsburg Relic and the SHR alphabet was found in Marsigli's manuscript (*Table 9.2.6-2*): all 38 graphemes of the Szekely-Hungarian Rovash alphabet of the Bologna Relic can be found in the Nikolsburg Alphabet (with partly different names), and only the following 8 graphemes (mainly ligatures) of the Nikolsburg Relic are missing from the alphabet in the Bologna Relic: ᚦ NCS /nt͡ʃ/, Ð NGY /ng/, 𐲩 CH /x/, 𐲕 UNK /nk/, Ɗ NJ /nj/, ᛉ ZT /zt/, 丰 TPRUS /*nɒp/, and 𐲲 US /ʃ/. Consequently, the Nikolsburg Alphabet, the Ancient Alphabet by Kájoni, and the SHR letters of the Bologna Rovash Calendar were based on different copies of a proposed common ancestor rovash calendar.[764]

The proposed ancestor of the Bologna Rovash Calendar was surely transcribed from a calendar written in the Latin-based Old Hungarian orthography (*Sec. 3.6.4/B*), given the appearance of Old Hungarian orthographical archaisms in the Bologna Rovash Calendar. For instance, the SHR 𐲪 /u/ represented the sound /y/ in the word Λ𐲪◊ /kyʃ/ 'small' (*Fig. 9.2.6-7c*). This was specific to the Old Hungarian orthography (*Table C-2*) at the turn of the 12th century, in the age of *King Coloman I, the Book-lover* and *King Stephen II* (*App. B*).[765]

Presumably, the rovash calendars were used by Christian priests to set the dates of the feasts. Therefore, its accuracy was vital. Probably only one or very few original rovash calendars were made and subsequently multiplied for geographical distribution.

The Bologna Rovash Calendar is obviously a result of a series of replications. During the replications, the calendar was updated: the name days of the saints canonized after the 12th century were included as well (*Sec. 9.2.6/C*). For instance, the feast of Franciscan missionary *Saint Bernardine of Siena* (1380–1444) is in the Rovash Calendar. He was canonized in 1450, so his feast (20th May) was obviously included after that time. Another example is that the Rovash Calendar contains the feast of *Abraham* (6th October), excluded from the 16th century Catholic calendars. Therefore, the last replication had to happen before, probably at the end of the 15th century.[766]

During the subsequent replication, the SHR orthography of the inscription was partly corrected according to the development of the language; however, some archaism remained in the text.[767] For instance, the 𐲏, 𐲏 H /h/ is missing from the names of the Saints; however, the alphabet enclosed into Marsigli's manuscript contains 𐲏, 𐲏 H /h/ with the calligraphic glyph 𐲏 (*Fig. 9.2.6-4*).[768] The probable reason for this is detailed in *Sec. 3.6.4/C*. The estimated evolution of the Rovash Calendar is on the flow chart in *Fig. 9.2.6-1*, where the surviving relics are denoted with a double line border.

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[763] Vékony 1992b, p. 289

[764] Vékony 2004a, p. 96, pp. 106–107

[765] Vékony 2004a, p. 105

[766] Sándor 1991, p. 47

[767] Vékony 2004a, p. 106

[768] Sándor 1991

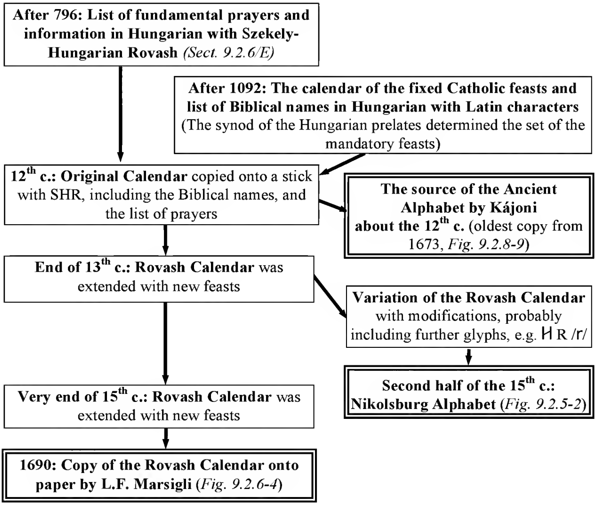
After 796: List of fundamental prayers and information in Hungarian with Szekely-Hungarian Rovash (Sect. 9.2.6/E)
After 1092: The calendar of the fixed Catholic feasts and list of Biblical names in Hungarian with Latin characters (The synod of the Hungarian prelates determined the set of the mandatory feasts)
12th c.: Original Calendar copied onto a stick with SHR, including the Biblical names, and the list of prayers
The source of the Ancient Alphabet by Kájoni about the 12th c. (oldest copy from 1673, Fig. 9.2.8-9)
End of 13th c.: Rovash Calendar was extended with new feasts
Variation of the Rovash Calendar with modifications, probably including further glyphs, e.g. H R /r/
Second half of the 15th c.: Nikolsburg Alphabet (Fig. 9.2.5-2)
Very end of 15th c.: Rovash Calendar was extended with new feasts
1690: Copy of the Rovash Calendar onto paper by L.F. Marsigli (Fig. 9.2.6-4)

Figure 9.2.6-1: The flow chart of the estimated evolution of the Rovash Calendar and SHR alphabets derived from these rovash calendars

Gy. Sebestyén tried to reconstruct the boustrophedon direction of the Rovash Calendar (*Fig. 9.2.6-2*),[769] and S. Forrai later refined it (*Fig. 9.2.6-3*).[770]

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[769] Sebestyén 1915, p. 38

[770] Forrai 1994, p. 145

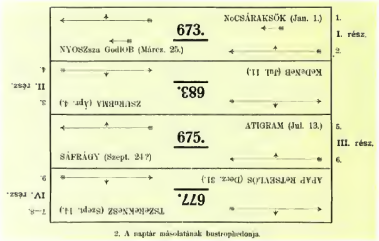

Fig. 9.2.6-2: The boustrophedon of the Rovash Calendar in the book of Sebestyén

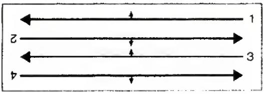

Fig. 9.2.6-3: S. Forrai's illustration of the boustrophedon direction on the stick

Forrai reconstructed the sides of the Rovash Stick Calendar, which served as a source for Marsigli (*Table 9.2.6-1*).[771]

The rovash stick	Content	Manuscript of Marsigli
Side 1	Calendar from 1 January to 11 July	Pages 673 and 683
Side 2	Calendar from 13 July to 31 December	Pages 675 and 677
Side 3	Biblical names	Pages 679 and 685
Side 4	Fundamental prayers	Pages 681 and 671

Table 9.2.6-1: The contents of each side of the reconstructed rovash stick

B) SHR alphabet found in the manuscript of Marsigli

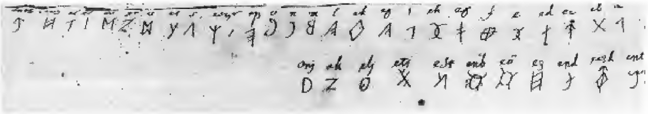

Figure 9.2.6-4: The alphabet found in the manuscript of Marsigli[772]

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[771] Forrai 1994, pp. 146–147

[772] Sándor 1991

Name in the relic	s	esz	r	ep	o	n	m	l	ek	eg	i	eh	eg	f	e	ed	ec	eb	a
SHR glyph	Λ	Y	⟋	ⱻ	Ↄ	)	ᛔ	Ʌ	◊	ʌ	1	Ϫ	ǂ	⊗	Ʒ	ł	↑	X	4
IPA	ʃ	ʒ	r	p	o	n	m	l	k	g	i	h	ɟ	f	ɛ	d	t͡s	b	ɒ
Current name	S	ZS	R	P	O	N	M	L	K	G	I	H	GY	F	E	D	C	B	A
Name in the relic	onj	ak	elj	etj	est	enb	eö	ez	end	eczk	ent	encz	ecz	ei	es	v	ev	u	et
SHR glyph	D	↯	θ	X	λ	Ӂ	¤	ⴹ	≻	⇕	T	ʕ	Ц	Ɩ	I	M	≲	⋈	Ꭹ
IPA	ɲ	k	ʎ	c	ʃt	nb	ø	z	nd	t͡sk	nt	nt͡s	t͡ʃ	j	s	v	y	u	t
Current name	NY	OPEN K	LY	FORKED TY	ST	NB	CLOSED OE-UE	Z	ND	CK	ENT	NC	CS	J	SZ	V	OPEN OE	U	T

Table 9.2.6-2: The most probable transcription of the alphabet found in the manuscript of Marsigli

In *Table* 9.2.6-2, the Latin letter-name *ev* of ≲ OPEN OE /y/ is uncertain. The location of ǂ GY /ɟ/ in the alphabet implies that at an earlier time it represented /g/ as well. Similarly, Y ZS /ʒ/ near Λ S /ʃ/ probably denoted /ʃ/ in the earlier age of the Rovash Calendar. In the list of feasts (*Sec. 9.2.6/C*) the ¤ CLOSED OE-UE represented /y/ and not /ø/, unlike the alphabet attached to Marsigli's manuscript (*Table 9.2.6-2*). The list of feasts obviously retained more archaic elements than the alphabet itself, since the list of feasts was more difficult to modify during replication. Consequently, the original meaning of ¤ CLOSED OE-UE was /y/ and not /ø/.

C) List of the feasts of the Saints (the core of the calendar)

In the time of creating the Rovash Calendar (12th–15th c.), instead of the sound /ɟ/, the sound /d͡ʒʲ/ was also possible.[773] *Fig. 9.2.6-5* presents the photograph of page 673 of the original manuscript, and *Table 9.2.6-3* shows its transcription.

Fig. 9.2.6-5 demonstrates the use of the 1 J for /i/; compared to the CBR Γ ANGLED I /i/. In the first row, the name Ϫʕ1 /int͡se/ 'Innocent' is erroneously marked on the 22nd of January. The day of the 22nd of January, in the official Catholic calendar is the feast of *Vincent* (*Vincentius*) and not *Innocent*'s feast. Moreover, in the name Ϫʕ1 /int͡se/ 'Innocent', the 1 /i/ is unnecessary, according to the original rovash orthography (*Table 3.1-6*), where the short vowels are not written. Presumably, the original form of the name on this day was *Ϫʕ⊣ /βˈnt͡se/ 'Vincent', where the glyph of the ⊣ OPEN V /β/ can be reconstructed from the glyph of the probably erroneously written Γ ANGLED I /i/. In the early Old Hungarian period, the /β/ was used, as /v/ did not exist yet. Evidence of using /β/ in Christian names borrowed from Latin is the Hungarian version of *Valentinus*. Later the change /β/>/b/ or /v/ occurred in the Hungarian language. For the /β/>/b/, an example is the evolution of the Latin *Valentinus* > Hungarian *Bálint* /baːlint/.[774] For the transition /β/>/v/, an example is the change Latin *viola* > Hungarian (1346) *Byola* > (currently) *viola*. The intermediary form *Byola* in a medieval source proves that the Latin *viola* was borrowed in the time when /v/ had not yet existed.[775] The name *Vincentius* was also adopted in that time; therefore, its reconstructed Ϫʕ⊣ /βˈnt͡se/ 'Vincent' form is reasonable. When /β/ disappeared from the Hungarian language, before the 16th century, the rovash grapheme ⊣ OPEN V went out of use as well. Therefore, the copier of the rovash calendar might not know the ⊣ OPEN V, and probably assumed the similar 1 J instead. Consequently, Ϫʕ1 /int͡se/ was copied instead of the original Ϫʕ⊣ /βˈnt͡se/.

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[773] Losonczi 1931, pp. 41–43; Papp 1957, p. 32; Jakab 1964, pp. 39–41

[774] E. Abaffy 2003b, p. 303

[775] E. Abaffy 2003b, p. 303

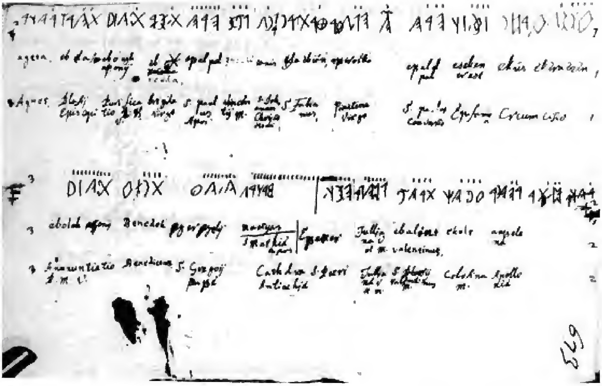

Figure 9.2.6-5: Page 673 of the original manuscript with the feasts from the 1st of January to the 21st of March[776]

4YΛ4 Y4ΛX DIΛX ᕋƷ⁄X Λ4Ǝ ƆϽ1 /Ͻ41 Ͻ4X4Φ 4Λ⁄1Ǝ Ⲁ Λ4Ǝ YI⁄ÞI ϽΩ4⁄◊ΛΩ◊
/kyʃkᵒraːt͡ʃᵒn sᵋnkᵋrᵋst paːl ᵒntᵒl pirᵒʃkɒ faːbiaːn jaːnᵒʃ int͡se paːl brɛdɒ bᵒːᵈᵒgᵒsˢᵒɲ bᵒlᵃːʒ aːgᵒtɒ/
‘New Year, Saint Cross, Paul, Irene, Fabian, John, Innocent, Paul, Brigitte, Blessed Lady, Balasius, Agatha‘
DIΛX ◊ƗϽX ΘΛ⁄Λ Λ4Y4Ǝ ⁄YƷƎ 41ΛΩ1 TΛ4X YΛϽ◊ 4ϽΛƎ4 4Y⁄Ω 4YΛ4
/aːgᵒtɒ durᵘcᶜɒ ɒpᵒlⁱnɒ kolᵒʃ baːlᵉnt juːliɒ peːtᵉ/ᵘr maːcaːʃ gᵉrgᵉʎ bᵉnᵉdᵉk boːdᵒgᵒsˢᵒɲ/
‘Agatha, Dorothy, Apalina, Scholastica, Valentin, Julia, Peter, Matthias, Gregory, Benedict, Blessed Lady’

Table 9.2.6-3: The transcription of page 673 of the manuscript of Marsigli[777]

The name ᕋƷ⁄X /brɛdɒ/ is mistaken as well. On the 1st of February (*Brigitte's* name day), the Hungarian version *Brigida* should have been written.[778] The reconstructed form of this name is ᕋǂ⁄X /brⁱgⁱdɒ/, which is well attested to in other sources.[779] Surely, ǂ was misinterpreted to Ʒ. This theory supports that ǂ represented /g/ in the presumed original rovash calendar.

In the second row, the second word from the right is 4Y⁄Ω /durᵘcᶜɒ/ ‘Dorothy’. The use of the SHR ˥ T /t/ supports that the original rovash calendar was made when there was no rovash grapheme yet for representing /c/.[780] Similar is the case of the name Λ4Y4ᕒ /maːcaːʃ/ 'Matthias', which is the eighth word (from the right) of the second row.

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[776] Sándor 1991, p. 165

[777] Sándor 1991

[778] Sándor 1991

[779] EtSz. 1914-30, p. 538; Berrár & Károly 1984, p. 795; Knauz 1876, p. 150

The fourth name from the right in the second row is YᐱƆ◊ 'Scholastica'. The original Hungarian version of 'Scholastica' was "*Kolastika*",[781] later the *Kolastika* > *Kolos* change happened. Since the letter *s* before the letter *t* did not denote /ʒ/ in the Old Hungarian orthography,[782] the name YᐱƆ◊ is transcribed /koloʃ/ and not /koloʒ/.

On the top right corner of page 683 of Marsigli's manuscript, the first feast-day is Y⧖⁄Ж /ᵒmbruʃ/ 'Ambrosius' (4th April, see *Fig. 9.2.6-6a*). In this case, the reptile-like symbol Ж NB was used for /mb/. The transcription of page 683 is in *Table 9.2.6-4*.

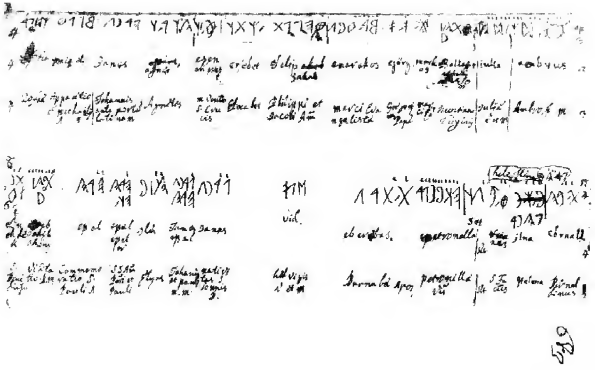

Figure 9.2.6-6a: Page 683 with the names of the Saints from the 4th of April to the 11th of July[783]

Figure 9.2.6-6b: The name /miʰaːʎ/ 'Michael' in the first row of page 683[784]

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[780] E. Abaffy 2003b, p. 307

[781] Ladó 1971, p. 181

[782] Sándor 1991

[783] Sándor 1991

[784] Sándor 1991

41ФЖY Ө41Ɛ ⁄Ɔ41 Ɣ⁄4ƔƆ⅄ Ɣl⁄Ɔl ƔXY⁄ X41Ɛ⅄Ф ⁄ƆO⁄4Ɛ ‡⁄‡ ⁂ DI⅄X 41⅄Ж1 YЖ⁄Ж
/ᶛmbruʃ juːliɒ bᶛːᵈᶛgᶛsˢᶛɲ ɒlbᵋrt d͡ʒʲᶲrd͡ʒʲ/ɟᶲrɟ maːrkoʃ fʲlᵋpjᶛkᶛb ᵋrʒᵉːbᵋt sᵋnkᵋrᵋst gotʰaːrd jaːnᶛʃ miʰaːʎ ʒuːfia/
'Ambrosius, Julius, Blessed Lady, Albert, George, Marc, Philip–Jacob, Elisabeth, Invention of the Holy Cross, Gotthard, John, Michael, Sophie'
⅄4Ɛ ƆI⅄ ⅄4Ɛ ⁄Ɔ41 ⁄Ɔ41 ‡1M ⁄4X⁄X 41ƆƆ⁄ƔƐ Ɣ⁄Ↄ⁄Ф ƆX⁄Ɔ Ↄ⅄1 ⅄Ↄ⁄X O‡ƆX DI⅄X ⅄4Ɛ ⁄ƔƐ
/birnaːl ilᶛnɒ orbaːn fᵋrᵋnc ᵋʃtᵃːⁿ pᵋtroːniɒ bᶛrᶛbaːʃ vid jaːnᶛʃ jaːnᶛʃ paːl *laːsoː paːl pᵉːtᵋr paːl bᶛːᵈᶛgᶛsˢᶛɲ bᵋnᵋdᵋk/
'Bernardo, Helena, Urbanus, Franciscus, Stephen, Petronella, Barabbas, Vitus, John, John–Paul, Ladislaus, Paul–Peter, Paul, Blessed Lady, Benedict'

Table 9.2.6-4: The transcription of page 683 of the manuscript of Marsigli[785]

In the first row of *Table 9.2.6-4*, the second word from the right was originally 1⅄Ж1 /juli/julʲj/ 'Julius,' and later it was corrected by the unknown person (surely a Szekely assistant of Marsigli) incorrectly to 41⅄Ж1 /juliɒ/, as K. Sándor discovered after investigating the original manuscript.[786] Similarly, the eighth name from the right, namely X41 /jᶛkᶛb/ was written by Marsigli as X11, and his assistant corrected it—in this case correctly, since the bottom slant line of 4 /k/ was lost during the subsequent copying. According to Sándor, the twelfth name (ƆI⅄) from the right in the second row was originally ƆI⅄ /laːsoː/, and a small slanting line on the top of the ligature ⅄ /laː/ was lost during subsequent copies.

The photograph of page 673 is in *Fig. 9.2.6-7a*, and its transcription is in *Table 9.2.6-5*.

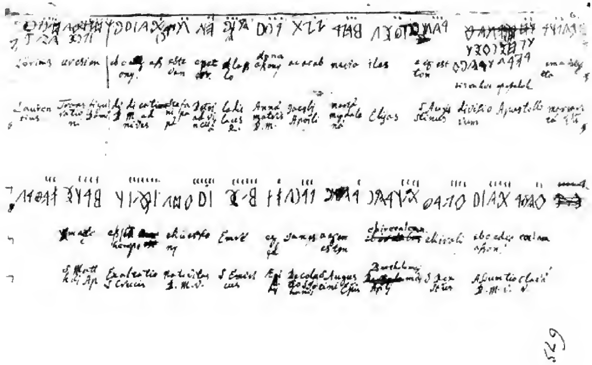

Figure 9.2.6-7a: Page 675 with the feasts from the 13th of July to the 24th of September[787]

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[785] Sándor 1991

[786] Sándor 1991

[787] Sándor 1991, p. 167

DIϽ4 X↿1 41⌐4Ƨ ΛƷ01 ϽϽΛΛ4 ◊ϽΛ4ΥΛ4ƧƧ ΥƷ◊ϽƷ日1Υ ◊ΛΛƧ ΥƷ⪢日Υ 4Υ1Λ⌐4Ƨ ϟ⌐≷Λ ƷϽ1ǁ⌐Ħ Λ◊Ƨ∤ ΥMΨϽ DIΛX Λ ⌐ΥƧ ϽΛIΛ
/mɒrgitɒ tⁱzᵋnkeːt ᶛpᵒstᶛlok tizɛnkeːt ɒpoʃtalok aːgᵒʃton iːʎeːʃ maːriɒ jᶛkᶛb ɒnⁿᶛᶛsᵒɲ laːsloː pᵉːtᵋr ᵉʃtᵃːⁿ bᵒːᵈᵒgᶛsˢᵒɲ oʃvᵃːt dᵒmᵒkᵒʃ uːrsine løːrⁱnt͡s/
‘Margareth, Twelve Apostles (*two times*), Augustinus, Elias, Maria [Magdalena], Jacob, Ladislaus, Peter, Stephen, Blessed Lady, Osvath, Dominic, Transfiguratio Domini, Lawrence’
Λ4Φ⌐4ǂ ƷΥ4Ƨ Υǀ⌐⪢ǀ ΛĦ◊DI Ʒ⌐Ƨ ∤ǂ ΛD41 ϽΛΛ4 ϽΛ4Υ⌐X Ø4⌐1◊ DIΛX 4⌐Λ◊
/klaːrɒ bᵒːᵈᵒgᶛsˢᵒɲ, kiraːʎ bortɒlɒn aːgᵒʃtᵒn jaːnᵒʃ ᵋɟᵋd ᵋ/ⁱmre ᶛsˢᵒɲkyʃ sᵋnkᵋrᵋst maːteː d͡ʒʲaːrfaːʃ/ɟaːrfaːʃ/
‘Clara, Blessed Lady, King [Saint Stephen I], Bartholomew, Augustine, John, Giles, Emeric, Nativitas Mariae, Exaltatio Crucis, Matheus, Gerardius’

Table 9.2.6-5: The transcription of page 675 of the manuscript of Marsigli[788]

In the Bologna Rovash Calendar, the original rules for creating ligatures and skipping graphemes were followed as in stenography, which strengthen the importance of this relic.[789] An example is presented in *Fig. 9.2.6-7b*: On the 15th of August is the Feast of the Assumption of the Blessed Virgin Mary, called in Hungarian *Nagyboldogasszony* ‘Great Blessed Lady’. Included in the Calendar are some feasts of the Virgin Mary, all of them called *Boldogasszony* ‘Blessed Lady’. In these names, the word /boːdog/ was used, which is the original form of the present-day Hungarian /boldog/ ‘Blessed’. Vékony claimed that its original form could be DIΛ⋇ /boːdᵒgᶛsˢᵒɲ/, and the auxiliary vertical and horizontal lines of ⋇ were lost during the copying of the rovash calendar. Possibly the ligature /bd/ survived as ⋇ in the Ancient Alphabet by Kájoni as well (*Fig. 9.2.8-9*). However, Sípos claimes that the ligature ⋇ might not contain the vertical line, as only the horizontal one could represent the letter ∤ D, according to the ligature building rules.[790]

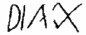

Figure 9.2.6-7b: The name of the Blessed Virgin Mary on page 675[791]

Fig. 9.2.6-7c presents the word ΛĦ◊ /kyʃ/ ‘little’, in which the Ħ U is used for the vowel /y/, according to the Hungarian Chancellery orthography.[792]

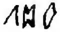

Figure 9.2.6-7c: Word /kyʃ/ ‘little’ in the second row of page 675[793]

The photograph of page 677 is presented in *Fig. 9.2.6-8a)* and *b)*, and its transcription in *Table 9.2.6-6.*

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[788] Sándor 1991

[789] Forrai 1994

[790] Sípos, László 2008–2011: *Personal communication*

[791] Sándor 1991

[792] Sebestyén 1915; Sándor 1991

[793] Sándor 1991

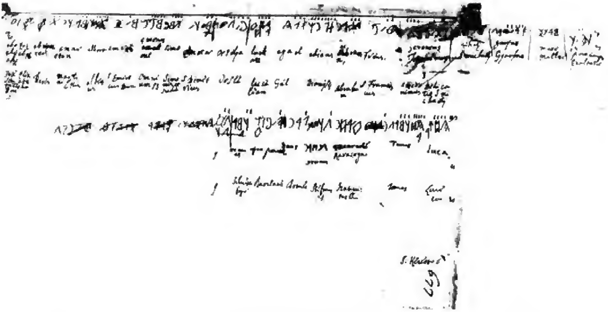

Figure 9.2.6-8a: The right and middle parts of page 677 with the feasts from the 14th of September to the 31st of December[794]

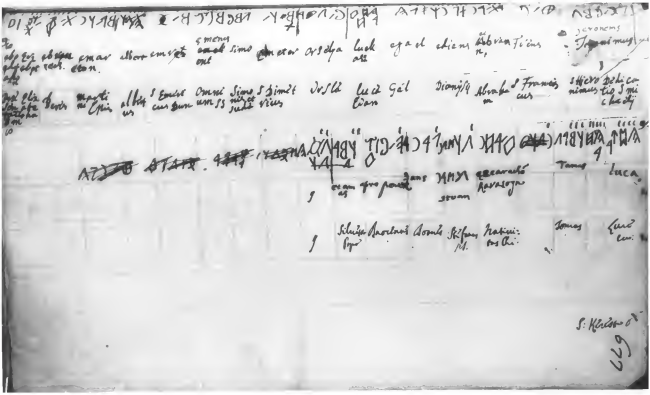

Figure 9.2.6-8b: The left and middle parts of page 677 with the feasts from the 14th of September to the 31st of December

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[794] Sándor 1991

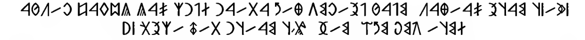
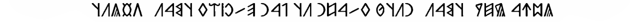

/sᵋnkᵋrᵋst maːteː d͡ʒʲaːrfaːʃ/ɟaːrfaːʃ miⁿaːʎ jɛromᵒʃ fᵋrᵋnt͡s aːbrᶛⁿaːn diᵋnᵋʃ gaːl lukaːt͡ʃ orʃᵒʎɒ dᵋmᵋtᵋr ʃimon mⁱnt͡sɛnt ᵋ/ⁱmre albᵋrt maːrtᵒn bᵋrᵋt͡sk ᵋrʒeːbᵋt ᵃsˢᵒɲ/
‘Exaltatio Crucis, Matheus, Gerardius, Michael, Jerome, Frank, Abraham, Denis, Gallus, Lucas, Ursula, Simon, Omnium Sanctorum, Emeric, Martin, Brictius, Elizabeth, [Blessed] Lady’

/lut͡sɒ laːzaːr tᶛmaːʃ ᵏᶛʳᵃːᵗʲᵒnᵋʃtᵉːʎ kᶛraːt͡ʃᵒn ᵋʃtᵃːⁿ jaːnᵒʲ ᶛproːsᵋntᵋk tᶛmaːʃ ʃylᵋʃtᵋʳ/
‘Lucia, Lazarus, Thomas, Christmas Eve, Christmas, Stephen, John, Innocentes, Thomas, Sylvester’

Table 9.2.6-6: The transcription of page 677 of the manuscript of Marsigli[795]

The ninth name (from the right) in the first row of page 677 is ⩓4ǂ /gaːl/ ‘Gallus’, which shows the original sound value /g/ of ǂ (*Fig. 9.2.6-8b*). *Fig. 9.2.6-8c* presents the name of Simon, where the rightmost grapheme is a ligature of Λ S /ʃ/ and the 1 J /i/.

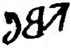


Figure 9.2.6-8c: The inscription ‘*Simon*’[796]

D) List of Biblical names related to the life of Jesus Christ

Fig. 9.2.6-9 presents the photograph of page 679; its transcription is in *Table 9.2.6-7.*

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[795] Sándor 1991

[796] Sándor 1991

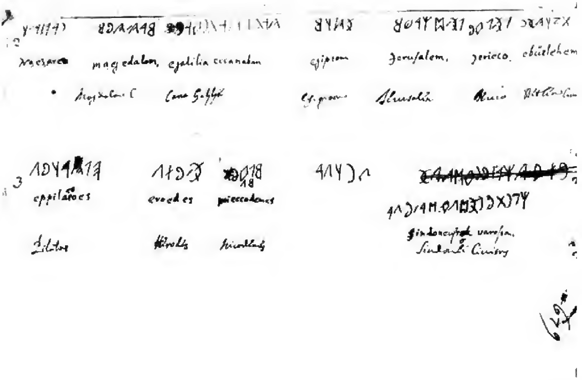

Figure 9.2.6-9: Page 679 with personal and geographical names related to Jesus Christ[797]

Y⁄4B4D 3DΛ⁄Λ43 4D4O DX41Λ1Λ4Λ 3Y1ΛƷ 3O4YM⁄Ʒ1 DO1⁄Ʒ1 DΣΛY≷X
/bøtleᵋn jɛriko jɛruʒaːʎᵋm ɛd͡ʒʲitᵒm/ɛɟitᵒm gɒliliaːbᵒn kaːnɒ mɒgrᵒlom naːzaːrᵋt/
‘Betlehen, Jericho, Jerusalem, Egypt, Cana in Galilee, Magdala, Nazareth’
ΛDY4Λ13 Λ4DHƷ Λ33O13 4ΛYDO 4ΛD⁄4M OΛMƷDD4D1Y ΣΛ⁄4M ODD41Y ΛD49
/nɒdɲl ʃidonᵒk vaːrᵒʃe ʃindonɛuʃᵒk vaːroʃɒ kntʃɒ mikodᵉːmᵘs ʰɛroːdᵋʃ pilaːtoʃ/
‘(*undechipered*), City of Sidonians, City of Sidonians (*in a different form*), (*undechipered*), Nicodemus, Herod, Pilate’

Table 9.2.6-7: The transcription of page 679 of the manuscript of Marsigli[798]

Inscriptions on page 685 are presented in *Fig. 9.2.6-10*; their transcriptions are in *Table 9.2.6-8.*[799] In the inscription is the expression “Bishop Annas”; however, in the Bible *Annas* was not a bishop but a high ranking priest.

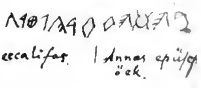

Figure 9.2.6-10: The personal names related to the life of Jesus Christ in the page 685

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[797] Sándor 1991

[798] Sándor 1991; Forrai 1994, pp. 233–234

[799] Sándor 1991, p. 167

ʌ4⊕1ʌ4◊ ◊ƎΛ¤ƎΛ9
/ɒnⁿaːʃɒyʃɒᶲk kɒlifaːʃ/
‘Bishop Annas, Caiaphas’

Table 9.2.6-8: The transcription of page 685 of the Marsigli manuscript

E) List of fundamental prayers

The Bologna Relic contains a page with fragmented and erroneous text. Based on its paleographical and grammatical analysis, some fragments are probably from the 9th century, as Vékony supposed.[800] *Fig. 9.2.6-11* presents this page. Most of the text is crossed out, as surely Marsigli and his Szekely assistant were not able to transcribe it. However, some words and expressions can be read. Its possible transcription is presented in *Table 9.2.6-9.* An interesting feature of the inscription is that **:** *Colon* was used as a word separator in one case.

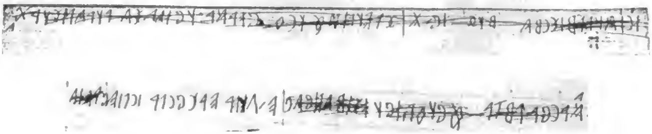

Figure 9.2.6-11: The text on page 681 of the Marsigli manuscript[801]

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[800] Vékony 1992b, p. 289

[801] Sándor 1991

First section (*from right*)	ǂ⁄Ↄǂ ǪYᗺ ΛᗺↃ⊣I ᗺ4⁄4 YΛ Ↄɫ
Phonetic transcription	/ˈdᵉn ᵃlatᵗ ……………… mᵃˑte d͡ʒʲordʒʲ/ɟorɟ/
In English	'This year …. Matthew George'
Second section (*second half of the first row and the beginning of the second row from right*)	ↃↃ4Ꮑ \ Ẋ 4Y3M Λ4Y4 Λ3ΛΛǂↃY : 4Λ4 ǂↃ ◊ↃY ⋗Ⴟǂ4 YΛ4Ǫ
Phonetic transcription	/haːlaːt ad͡ʒʲᵈʒʲunk/aɟᶡunk ᴵʲtᵋnⁿᵋk ..od͡ʒʲ/oɟ adta : tod͡ʒʲ/ɟ(*rᵋd)ᵋlᵐᵋʃʃeːg aːtɒl veːt a bo \ t͡ʃaːno/
In English	'Let's thank God that he forgave by [our] confession.' (*reconstructed*)
Third section (*middle of the second row*)	ↄΛↃႾΛᗺǪǂ YↃɫ⁄1◊ YↃ⋗ 41ᗺ ↑4
Phonetic transcription	/at͡s mˈjaᶜᵃˑnkot kirᵋdot d͡ʒʲ/ɟymʸlt͡ʃolnᵋk/
In English	'you give (~offer, pray) Lord's Prayer, Creed ……….'
Fourth section (*left part of the second row*)	ΛI41 ↃΛI1ↃI 41ↃↃↃ4ǂ 4ႾYΛ⁄ǂ
Phonetic transcription	/prᵒst(=βˈn)t͡ʃˈa panonia sᵃnisloː jaːs(=n)ᵒʃ……/
In English	'Province Pannonia, Stanislav, John'

Table 9.2.6-9: The reconstructed transcription of the list of fundamental prayers, partly based on the transcriptions of Németh[802], Vékony[803], and Sándor[804]

Zelliger showed that ↑4 /at͡s/ '[you] give' was probably written according to its pronunciation. In addition, ↄ NC may have represented /nak/ or /nɛk/, since *nc* was a typical abbreviation of these syllables (grammatical inflexion) in the Old Hungarian orthography (*Table 3.6.6-1*).[805] Moreover, the rightmost grapheme of the second row (*Fig. 9.2.6-11*) is probably a Ⴟ CS /t͡ʃ/ based on the reconstructed meaning of the word containing this grapheme.[806] Note that on page 681, the sound /ø/ does not exist. This supports that the text originated from the period when /ø/ did not exist in the Hungarian language (before the 13th century).[807]

In the second row, the expression /at͡s mˈjaᶜᵃˑnkot kirᵋdot/ means: 'you give (~offer, pray) Lord's Prayer, Creed'. This Hungarian text is in the accusative case.[808] According to Abaffy and Szathmári, in /kirᵉdot/ 'Apostles' Creed' the insertion of /i/ into the original Latin *Credo* is linguistically reasonable; moreover, there are examples of similar forms in early Latin-based Hungarian sources.[809]

Vékony reconstructed the expression in the second row of *Fig. 9.2.6-12* as "*Province Pannonia*".[810] In medieval sources, the name Pannonia was frequently used as the name for Hungary, especially during the *Renaissance*. However, the term "*Province Pannonia*" was never used in the Hungarian Kingdom (as it existed after 1000). In the Carolingian-age of the Frankish Empire from 797 to 895, Pannonia was regarded as a province (also named March of Pannonia, see *Sec. 3.6.1*).[811] Therefore, as Vékony discovered, the original of the text in *Fig. 9.2.6-11* was probably made in the 9th century, in the area called "*Province Pannonia*" in the Frankish Empire (*Fig. 9.2.6-12*). The glyph of the SHR O /o/ in *Fig. 9.2.6-12* shows its relation to the CBR } OPEN O /o/u/ more clearly than the usual Ↄ shape of the SHR O /o/ (*Table 3.6.2-6*).

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[802] Németh 1934, p. 17
[803] Vékony 1992b, p. 289
[804] Sándor 1991
[805] Zelliger, Erzsébet 2010–2011: *Personal communication*
[806] Vékony 1997b, p. 1334
[807] E. Abaffy 2003b, p. 326
[808] Vékony 1997b, p. 1334
[809] Egriné Abaffy, Erzsébet 2010: *Personal communication*; Szathmári, István 2010: *Personal communication*
[810] Vékony 1992b, p. 289
[811] Goldberg 2006, p. 43

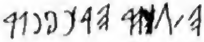

Figure 9.2.6-12: The name *Province Pannonia* on page 681 of the manuscript of Marsigli[812]

9.2.7. The 16th century

Csíkszentmiklós: A rovash inscription was discovered in the pulpit of a Christian church in a village in the 18th century. Then the original inscription was lost; its location was never exactly recorded. However, according to Sebestyén, it was surely Csíkszentmiklós (Szekelyland, present-day Romania).[813] Currently, there are at least three remaining independent copies, proving the existence of the original. One of them was created by Sámuel Szilágyi in 1749 (*Fig. 9.2.7-1*), and another was made by an unknown person on the 26th of May 1751 (*Fig. 9.2.7-3*).[814] The transcription of the inscription is

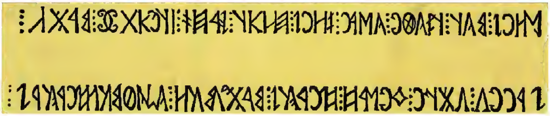

Figure 9.2.7-1: The copy of the Csíkszentmiklós Inscription from 1501 created by *S. Szilágyi* in 1749[815]

The original inscription was written in 1501, according to the meaning of the inscription. Gy. Sebestyén corrected the erroneous graphemes (*Fig. 9.2.7-2*).[816]

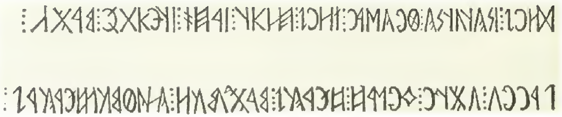

Figure 9.2.7-2: The copy of the Csíkszentmiklós Inscription corrected by *Gy. Sebestyén* in 1915

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[812] Sándor 1991

[813] Sebestyén 1915, pp. 60–61

[814] Sebestyén 1915, p. 60

[815] Dezsericzky 1753, p. 154; Sebestyén 1915, *Enclosure X*

[816] Sebestyén 1915, p. 64, *Fig. 7*

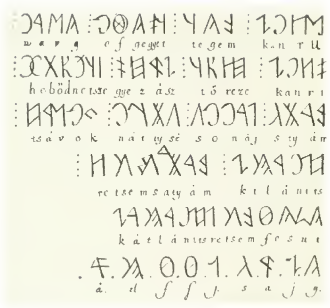


Figure 9.2.7-3: The copy of the Csíkszentmiklós Inscription from 1501 made by an *unknown author* in 1751

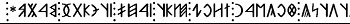
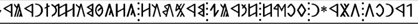
1st row	
	/uːrnᵃk sylᵋtᵉːʃᵉtyːl fogvaːn iːrnᵃk ᵋʒᵉrøt saːʒᵉɟ ᵋstᵋndøːbe maːty*aːʃ/
	After the birth of the Lord in the year one thousand five hundred one Matthias
2nd row	
	/jaːnoʃ ᵉʃc*aːn kovaːt͡ʃ t͡ʃinaːltᵃːk maːtyaːʃmᵋʃtᵉr gᵋrgᵋlymᵋʃtᵉrt͡ʃinaːltaːk/
	John, Stephan Kovács made [it]; Master Mathias, Master Gregory made [it].

Table 9.2.7-1: The transcription of the Csíkszentmiklós Rovash Relic. It was made by Gy. Sebestyén after several earlier attempts, then it was improved by the author of this book and linguist E. Zelliger.[817]

Constantinople Inscription: The mural inscription is the most important relic using the LTR writing direction (*Fig. 9.2.7-4a*).[818] In 1515 in Constantinople (Istanbul), B. Bélay, the ambassador of the Hungarian King Vladislas II (*App. B*), found he had to wait for two years for his admittance to the Sultan Selim I (1512-1520) and during this time, a Hungarian person named T. Kedeji Székely wrote this inscription on the wall of the Ambassadors' House.[819] Between 1553 and 1555, H. Dernschwam (1494–1568 or 1569) discovered and copied it (*Fig. 9.2.7-4a*); later the building was destroyed in an accidental fire. The copy written by Dernschwam into his diary was studied by F. Babinger (Würzburg), who forwarded it to the Danish scientist V. Thomsen in 1913.[820] Thomsen—who knew Hungarian—partly transcribed the text, and then sent the relic to Sebestyén for further analysis.

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[817] Sebestyén 1915, p. 64; Zelliger, Erzsébet 2010–2011: *Personal communication*

[818] Babinger 1914

[819] Ráduly 2007a, pp. 12–13

[820] Sebestyén 1915, p. 25

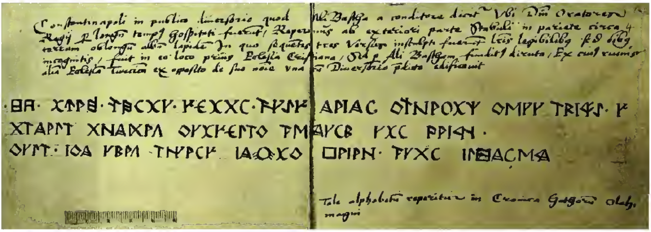

Figure 9.2.7-4a: The *Dernschwam copy* of the Constantinople Inscription. The original inscription was made in 1515 according to the text, and Dernschwam copied it in 1553.[821]

An interesting property of the Constantinople Inscription is the rich use of ligatures and a reptile-like symbol. *Fig. 9.2.7-4b* presents Thomsen's transcription from 1913; he was able to read the majority of the inscription. He did not know the reptile-like symbol ꭥ MB, which is why he inserted its glyph ꭥ into the transcribed text (*Fig. 9.2.7-4b*). The copy of the inscription contained a few obvious small mistakes that were corrected in the transcription (*Table 9.2.7-2*).[822] The relic contains the glyph variant 𐲖 of the grapheme 𐲖 L. The grapheme 𐲖 faces to the right, in accordance with the LTR direction of the inscription.

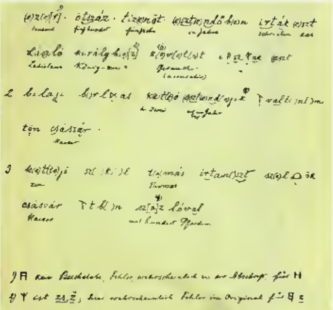
17. Thomsen megfejtési kísérlete.

Figure 9.2.7-4b: Thomsen's transcription (1913) with his translation into German[823]

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[821] Babinger 1914; Sebestyén 1915, *Enclosure XI*

[822] Sebestyén 1915, pp. 69–80; Németh 1934, pp. 9–10, *Table II*; Vékony 2004a, p. 22

[823] Sebestyén 1915, p. 75

1st row	ⴺH· XᛏPN· ᛘNCXᛩ· ᚴ€XXC· ᚺᛇᚴ APIAC ◊ᛏHP◊XY ◊Mᚴᚴ ᛁNᚼᛇ· ᚴ
	/ᵋzᵉr et͡sᵗˢaːz tizᵉnet ᵋstᵋndeːbᵋn iːrtaːk ˡtt laːsloː kiraːʎeːrt kᵉvᵋtᵋt jaːrɒttᵃk ⁱtt/
	It was written in 1515; delegates of King Vladislas were sent here.
2nd row	XᛁAPᛚᛏ XHAKPΛ ◊ᚴXᚴ€ᛚᛏ◊ ᚠMᛟᚴCB ᚴXC NPIᛋ
	/bilɒji bᵓrlɒbaːs kᵋt ɛstᵋndᵋjik[824] itᵗ vɒlt; nᵉm teːn t͡ʃaːsaːr/
	Barabas Bélay waited here for two years; the *emperor did not do [anything for them].
3rd row	◊ᚴᛚᛏ· I◊A ᚴBPΛ ᛁNPCᚴ IA&X◊ □PIPH· ᚠᚴXC IPNACMᛟ
	/kˡdᵋji sᵉːkᵉl tᵓmaːs iːrtaːn ˡtt […], sᵉlᵉmbeːk t͡ʃaːsaːr *idᵋ […] bᵋn *saːz loːvɒl/
	Thomas Kedeji Szekely wrote here […], *in the time of Emperor Selim, with one *hundred horses.

Table 9.2.7-2: The transcription of the Constantinople Inscription (1515); some parts of the inscription are still undeciphered. The transcription was gradually improved by the followings: Thomsen, Sebestyén, Németh, Pais, Vékony, Zelliger,[825] and the author of the book.

The grapheme ᛉ in the first row is a ligature of the ⸝ SIMPLE R /r/ and ᚴ T /t/.

Dálnok: In 1977, a wall-script in the Protestant Church of Dálnok (Szekelyland, Romania) became visible after an earthquake (*Fig. 9.2.7-5a* and *b*).[826] According to archaeologist E. Benkő, the inscription was made around 24th September 1526.[827]

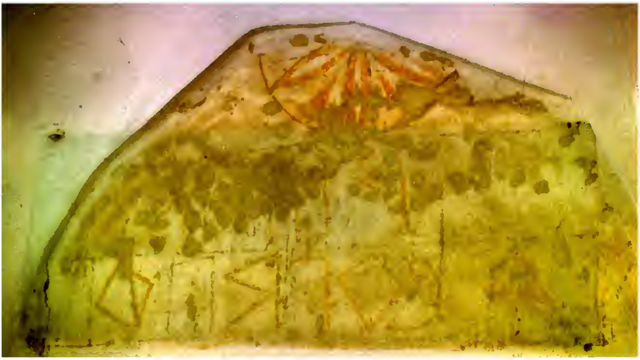

Figure 9.2.7-5a: Dálnok Inscription, 1526[828]

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[824] cf. TESz: article "esztendő" 'year'

[825] Sebestyén 1915, p.75; Németh 1934, pp. 9-10, *Table II;* Pais 1935, pp. 184-185; Vékony 2004a, p. 22; Zelliger, Erzsébet 2010–2011: *Personal communication*

[826] Ferenczi 1992, p. 56; Benkő, E. 1994a, pp. 157–168

[827] Benkő, E. 1981, pp. 138-145; Benkő, E. 1994a, p. 162, p. 166

[828] Libisch 2004

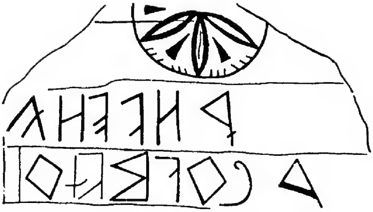

Figure 9.2.7-5b: The drawing of the Dálnok Inscription, 1526[829]

The text is a building inscription, transcribed as the following: ◇≻ʒᕒʒ◇Ↄ ᐊ \ ᐱHɜʒH ᐊ /ᵖda͟ː rɛpᵃrᵃːl \ aː nᵋkɛm bɛnᵋdᵋk/ 'He gives, (and) repairs for me. Benedict'.[830] This text contains some interesting features: (*i*) the multiple use of the SHR ᕒ M /m/ as a reversed Latin 'B' as well in the word ◇≻ʒᕒ /bɛnᵋdᵋk/ 'Benedict'; (*ii*) using the glyph variant ˥ of ʒ E /ɛ/; and (*iii*) using the glyph variant ⋌ of ᐱ L /l/.

Bögöz: In 1898, J. Huszka discovered a fresco inscription on the wall of the church in Bögöz Village (Szekelyland, Romania) that was made in the 1530s (*Fig. 9.2.7-6*). Its most probable transcription is ↃᐱᛏᐊXᐊ /ɒcɒiʃtᵋn/ 'God the Father'.

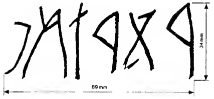

Figure 9.2.7-6: The Bögöz Inscription (1480-1530)[831]

J. Telegdi wrote a short monograph in 1598 which is one of the most important rovash legacies, called ***Rudimenta Priscae Hunnorum linguae*** 'Elements of the old language of the Huns'. The monograph greatly influenced pen-written rovash writing.[832] The book was distributed as a manuscript, of which several copies survived. He noted that "*Rovash is the only suitable writing system to represent the Hungarian language*". Telegdi discussed the orthographic rules of SHR in the form of questions and answers.[833] *Fig. 9.2.7-7a* presents page 4 of the *Rudimenta* with exercises and examples, including the text of the *Oratio Dominica* 'Lord's Prayer.'

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[829] Mike & Kósa 1981, p. 215

[830] Vékony 1987a, p. 19

[831] Szigethy 1930, pp. 368–369; Németh 1934, pp. 8–9; Püspöki Nagy 1972-1974, p. 37

[832] Telegdi 1994 (original: 1598)

[833] Sándor 1991

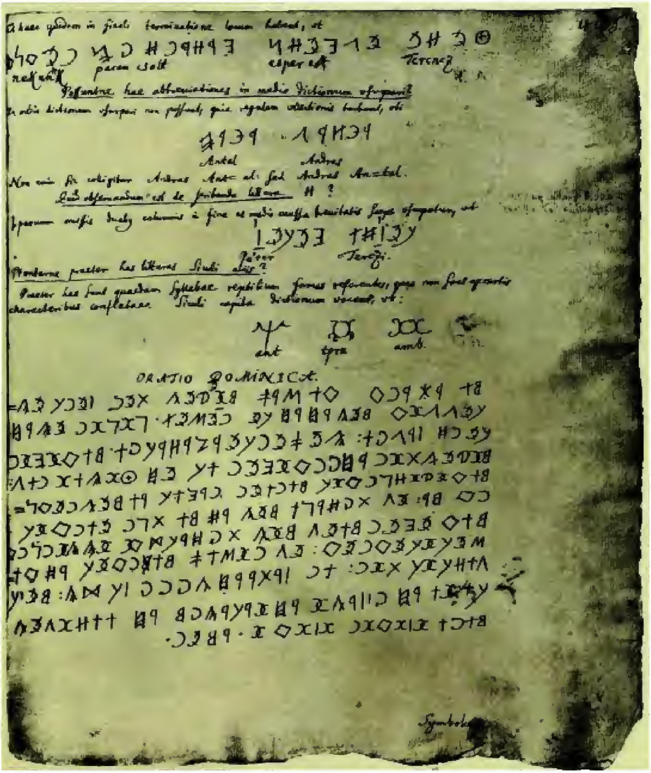

Figure 9.2.7-7a: The Page 4 of the *Rudimenta Hunnorum* by Telegdi (1598)[834]

The Apostles' Creed written in Szekely-Hungarian Rovash is presented in *Fig. 9.2.7-7b* and the alphabet of SHR is in *Fig. 9.2.7-8.*

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[834] Sebestyén 1915, Inset XVII

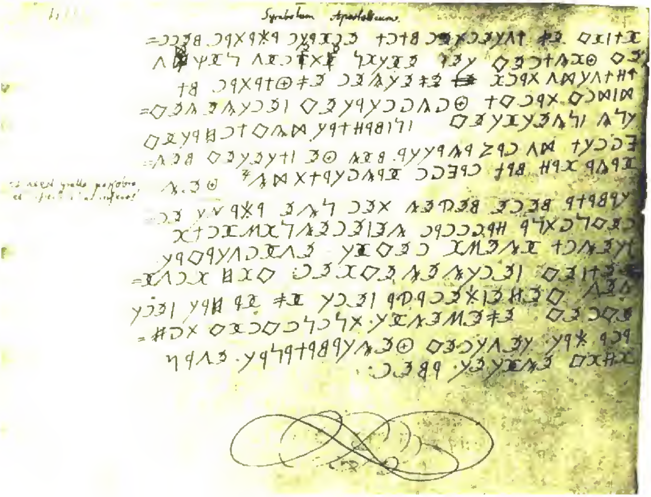
Symbolum Apostolicum.

Figure 9.2.7-7b: The Apostles' Creed in the *Rudimenta Hunnorum*[835]

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[835] Sebestyén 1915, Inset XVIII

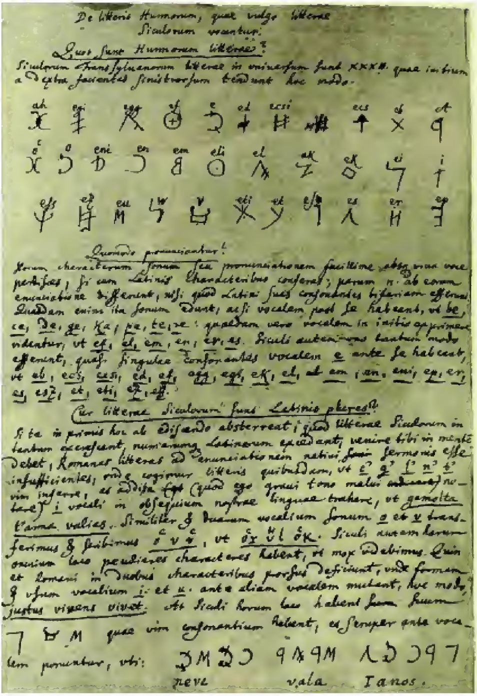

Figure 9.2.7-8: Alphabet by Telegdi in the *Rudimenta Hunnorum*[836]

Berekeresztúr: There are three SHR inscriptions in the Reformed Church of Berekesztúr (Szekelyland, Romania) from the second half of the 16th century.[837] One of them is a wall-script from 1561 (*Fig. 9.2.7-9*)[838] that was examined by L. Dávid in 1974. Its transcription is /bɒl^{o}g/. The relic follows one of the shortening rules of stenography: it is not necessary to include the second vowel if two vowels have the same height (*front* or *back*).[839] Vowel height is determined by the vertical position of the tongue. In Hungarian, the *palatal* (front, high) vowels are /ɛ/, /eː/ /i/, /iː/, /ø/, /øː/, /y/, /yː/; the *velar* (back, deep) vowels are /ɒ/, /aː/, /o/, /oː/, /u/, /uː/. In this case, /ɒ/ and

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[836] Sebestyén 1915, Inset XIV

[837] Erdélyi & Ráduly 2010, p. 65, 66, 78

[838] Ráduly 1992b; p. 3; Erdélyi & Ráduly 2010, p. 65

[839] Forrai 1994

/O/ are both back vowels. The word "*Balog*" is a typical, old family name in Hungary, so the transcription is certainly identical to the original pronunciation.

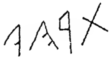

Figure 9.2.7-9: The wall-script in the church Berekeresztúr (1561)

9.2.8. The 17th century

In 1604, **I. Szamosközy** wrote a poem (a pasquinade) against Emperor Rudolf II (18th July 1552 – 20th January 1612; emperor of the Holy Roman Empire from 1576 to 1612). The most sensitive expressions were written in SHR (*Fig. 9.2.8-1*). The reason for crossing out the relic is unknown.[840] The direction of the title is RTL; the text is LTR. This relic uses casing and several ligatures. The text is in Latin, even the words written in SHR.

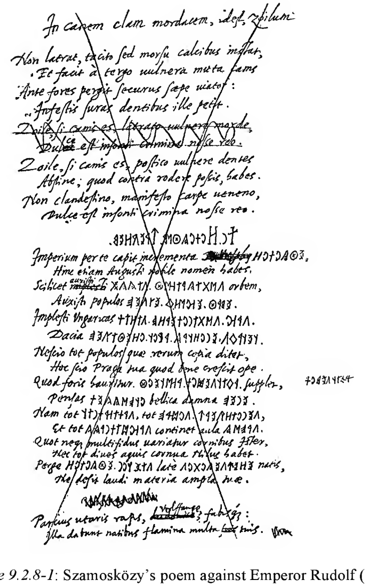

Figure 9.2.8-1: Szamosközy's poem against Emperor Rudolf (1604)

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[840] Szilágyi 1880; Sebestyén 1915, pp. 88–90

M. Bonyhai Moga: In 1627 and in 1629, an alphabet and other inscriptions were created with SHR by Bonyhai and another (unknown) person in Siménfalva (Szekelyland, Romania);[841] these relics were discovered by E. Benkő.[842] The inscriptions from 1627 are presented in *Fig. 9.2.8-2a* and *b*; their transcriptions are in *Table 9.2.8-1*.

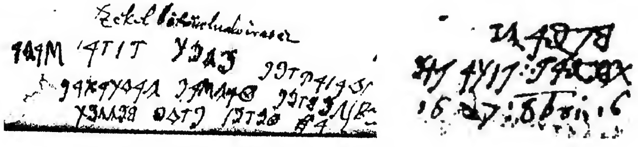
a) b)

Figure 9.2.8-2a) and *b)*: Inscriptions by Bonyhai (1627)

a)	4ʌ4M 4Y⟋1 Y3ʌ3 ƆƆ1↑4⟋4◊ Ɔ4X4Y◊4ʌ Ɔ4Mʌ4⊗ Ɔ31ᗺ3ʌ Y3ʌʌ3ᗺ Ɔ◊1Ɔ ⟋31̄3⊗ ᗺ4	
	/kɒraːt͡ʃoɲ ɛløːt iːrtɒ vɒlɒ \ ʃɛmjeːn fɒlvaːn lɒktaːbɒn \ az fejeːr nikoː mellet^{t}/	
	He had written before Christmas \ during his stay in Semjén Village \ near Nikó of Fejér [County].	
b)	1627 \ 3ǂ1 4Y⟋1 14ꝏƆƆX \ 1ʌ4ꝏ1ᗺ	
	/mihaːʎ \ boɲhɒi iːrtɒ idɛ \ 1627/	
	Michael \ Bonyhai wrote here \ 1627.	

Table 9.2.8-1: The transcription of the inscription by Bonyhai (1627). It is noteworthy that the word ƆƆ1↑4⟋4◊ could also be transcribed as /kɒraːt͡ʃon/.

The relics made by Bonyhai and another person in 1629 are shown in *Fig. 9.2.8-3*; their transcriptions are in *Table 9.2.8-2*.

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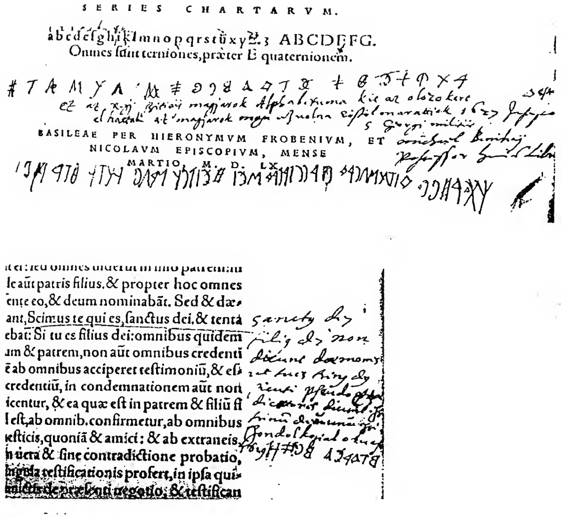
[841] Benkő, E. 1996a

[842] Benkő, E. 1996a, pp. 55–64; 1996b, p. 33


SERIES CHARTARVM.

abcdefghiklmnopqrstuxyz& ABCDEFG.

Omnes ſunt terniones, præter E quaternionem.

BASILEAE PER HIERONYMVM FROBENIVM, ET
NICOLAVM EPISCOPIVM, MENSE
MARTIO, M. D. LX.

le aūt patris filius. & propter hoc omnes
ente eo, & deum nominabāt. Sed & dæ-
ant, Scimus te qui es, ſanctus dei. & tentā
ebat: Si tu es filius dei: omnibus quidem
am & patrem, non aūt omnibus credenti
ē ab omnibus acciperet teſtimoniū, & eſt
credentiū, in condemnationem aūt non
icentur, & ea quæ eſt in patrem & filiū ſi
l eſt, ab omnib. confirmetur, ab omnibus
ſticis, quoniā & amici: & ab extraneis,
n uera & ſine contradictione probatio,
ngula teſtificationis profert, in ipſa qui-
de præſenti negotio: & teſtifican

Figure 9.2.8-3: Alphabet and rovash texts by Bonyhai and another person (1629)

1st row	𐳀𐳂𐳄𐳇𐳉𐳌𐳍𐳏𐳐𐳓𐳖𐳘𐳙𐳛𐳠𐳕𐳣𐳤𐳦𐳮𐳓𐳥𐳐𐳯 (*right-to-left*)
	/ɒ b t͡s d ɛ f g h i k l m n o p ku r ʃ t u ks i z (*left-to-right*)/
	a b c d e f g h i k l m n o p q r s t u x y z (*left-to-right*)
2nd row	𐳉𐳢𐳰𐳉𐳂𐳉𐳦 𐳛𐳤𐳛𐳚 𐳓𐳢𐳐𐳥𐳦𐳪𐳥𐳙𐳀𐳓 𐳟 · 𐳛𐳚𐳚𐳀𐳙𐳛𐳓 𐳮𐳉𐳢 𐳥𐳉𐳢𐳐𐳙𐳦 𐳮𐳛𐳖𐳛 · 𐳛𐳄𐳒𐳛 𐳌𐳐𐳛 𐳮𐳛...
	/ᵉʳʒᵉːb̲ᵉ̲t̲ ɒsˢoɲ kris̲t̲usnak øː ɒɲɲaːnɒk veːr serint vɒloː ɒcjɒ fiɒ vo.../
	Lady Elizabeth was agnate of the mother of Christ (*partly destroyed text*)
3rd row	𐳘𐳐𐳓𐳀𐳉𐳖 𐳘𐳛𐳍𐳀𐳐 1629
	/mikaɛl mogai 1629/
	Michael Moga 1629

Table 9.2.8-2: The transcription of the scripts by Bonyhai and another person (1629)

The sound values of the alphabet of *Fig. 9.2.8-3* are the following: 𐳀 A /ɒ/aː/, 𐳂 B /b/, 𐳄 C /t͡s/, 𐳇 D /d/, 𐳉 E /ɛ/eː/øː/, 𐳌 F /f/, 𐳍 G /g/, 𐳏 H /h/, 𐳐 I /i/iː/j/, 𐳓 K /k/, 𐳖 L /l/ (the glyph 𐳓𐳥 is also used for representing /l/), 𐳘 M /m/, 𐳙 N /n/ɲ/, 𐳛 O /o/oː/, 𐳠 P /p/, 𐳕 Q /k/, 𐳣 SIMPLE R /r/, 𐳤 S /ʃ/s/, 𐳦 T /c/t/, 𐳮 V /u/v/, 𐳓𐳥 X /ks/, 𐳐 Y /i/j/, and 𐳯 Z /z/s/. This relic also uses the glyph variant ǂ of the ⅃ P and the arched glyph variant Ꭷ of the ᛝ H. The alphabet contains new graphemes derived from ligatures: ᛞ Q < ◊ K + ◊ K and ⍲ X < Λ S + ◊ K.

One interesting feature of the relic is that ᛦ was mostly used for representing /l/. However, in one case ⩕ was applied (*Fig. 9.2.8-2b*) and on another occasion Λ was used for /l/ (the second row of *Fig. 9.2.8-3*). Obviously, these glyph variants of ⩕ were simple writing errors, based on their topological similarities, possibly due to the quickness of handwriting compared to the earlier carving technique.

Gy. Komáromi Csipkés: In the 12th of March 1653, György Komáromi Csipkés wrote a sentence in Szekely-Hungarian Rovash between the Hebrew (first row) and Greek (fourth row) scripts on the page 241 in the Pál Kismarjai Veszelin's memory book (*Fig 9.2.8-4*).

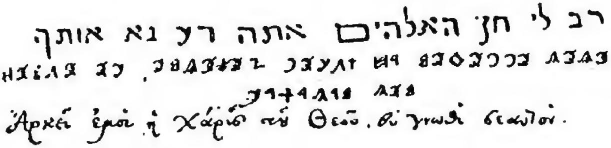


Figure 9.2.8-4: The sentence in Szekely-Hungarian Rovash by Komáromi Csipkés (1653)[843]

In *Fig. 9.2.8-4*, the first row of the sentence is: ᚼHƷƸᛦƷ ƷY ,ƷƸ⩕ƷǂƷϟ ⊃ƷYΛ† ⊟4 ƸƷ◊Ʒ⊃⊃Ʒ ᛦƷ⩕Ʒ, and the second row is: Y4ᚼ4ᛦ4Ƹ ᛦƷƸ. Its transcription is: /ɛleːg eːnnɛkɛm ɒz istɛn kɛɟɛlmɛ, tɛ ɛsmeːrd \ mɛg mɒgɒdɒt/ 'Lord's grace is enough for me; you should get to know thyself'. The special feature in this relic is the use of ϟ OPEN K /k/ besides the more frequently used ◊ K /k/. In this case, ϟ OPEN K /k/ was applied in a syllable with a high (front) vowel, and it was in the beginning of the word. This relic proves that the ϟ OPEN K /k/ is not restricted to the use of only syllables containing deep (back) vowels or at the end of the word, as sometimes was supposed.

I. Miskolci Csulyak (1575–1645): An important development in SHR was the appearance of the grapheme ʕ EE /eː/, differing from the grapheme Ʒ E /ɛ/. Formerly, the glyph Ʒ was used for both /eː/ and /ɛ/ (*Table 3.6.5-3*). The evolution process was the following: first, the glyph variation ʕ of Ʒ E /ɛ/ was invented and first used as /ɛ/. Later, the glyph ʕ was applied for /eː/, and the original Ʒ E became restricted to denote /ɛ/. *Fig. 9.2.8-5* shows the two alphabets (written between 1610 and 1645) of reformed pastor-poet I. M. Csulyak (1575–1645).[844] *Fig. 9.2.8-6* presents the memorial script of the reformed pastor **G. Miskolci Csulyak** (1627–1699), which consequently used the SHR ʕ glyph for /eː/. The later relic is from the 3rd of February 1654.[845] It is noteworthy that in the development of Szekely-Hungarian Rovash, individual innovations played significant roles.[846]

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[843] Sebestyén 1909, p. 237

[844] Jakubovich 1935, pp. 2–11

[845] Sebestyén 1909, p. 238

[846] Vásáry 1974, p. 168; Korompay 2003a

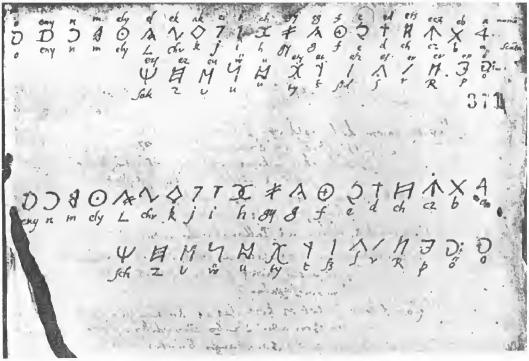
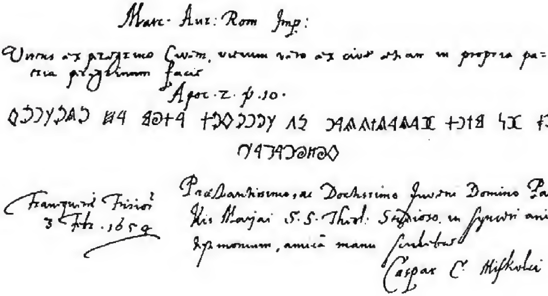


Figure 9.2.8-5: The Two Alphabets of I. Miskolci Csulyak (1610–1645)[847]



Marc. Aur: Rom Imp:

Unus ex proximo [illegible], virum vero ex [illegible] etiam in propria patria peregrinum facit

Apoc. 2. p. 10.

Francqueri Frisior. 3 Feb. 1654

Praestantissimo, ac Doctissimo Juveni Domino Paulo Kis Marjai S. S. Theol. Studioso, in synceri animi [illegible] monimentum, amica manu scribebat

Caspar C. Miskolci

Figure 9.2.8-6: **G. Miskolci Csulyak**'s memory script on the page 297 in the Pál Kismarjai Veszelin's memory book (3rd of February 1654)[848]

Gyulafehérvár Alphabet: *Fig. 9.2.8-7* shows an alphabet from **Portsalmi**'s handwritten book from 1655. The relic was copied by Csallány.[849]

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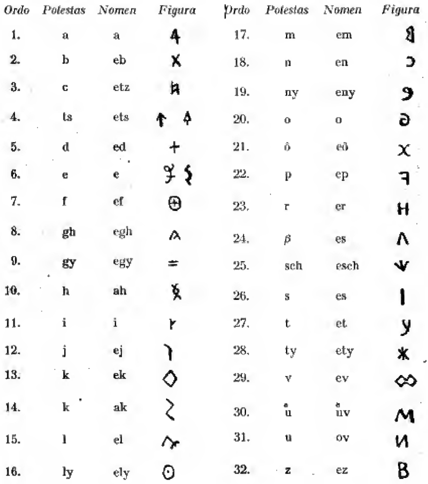
[847] Jakubovich 1935, pp. 12–14

[848] Sebestyén 1909, p. 238

[849] Csallány 1960, p. 101



Ordo	Potestas	Nomen	Figura	Ordo	Potestas	Nomen	Figura
1.	a	a		17.	m	em	
2.	b	eb		18.	n	en	
3.	c	etz		19.	ny	eny	
4.	ts	ets		20.	o	o	
5.	d	ed		21.	ö	eö	
6.	e	e		22.	p	ep	
7.	f	ef		23.	r	er	
8.	gh	egh		24.	ß	es	
9.	gy	egy		25.	sch	esch	
10.	h	ah		26.	s	es	
11.	i	i		27.	t	et	
12.	j	ej		28.	ty	ety	
13.	k	ek		29.	v	ev	
14.	k	ak		30.	ü	üv	
15.	l	el		31.	u	ov	
16.	ly	ely		32.	z	ez	

Figure 9.2.8-7: The Gyulafehérvár Alphabet from Portsalmi's handwritten book (1655)[850]

Énlaka: The famous Szekely-Hungarian Rovash relic (*Fig. 9.2.8-8*) located in the Unitarian church in Énlaka (Szekelyland, Romania) is dated to 1668.[851] It was examined by B. Orbán (1830–1890) in 1864.[852] The meaning of the inscription is: 'There is one God. Georgius Musnai Dakó'. According to Ferenczi, Dakó is a family name.[853] According to Ráduly, the last word can be transcribed as /diaːko/ being the Latinized form of the Hungarian word *diák* /diaːk/ 'student'.[854]

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[850] Csallány 1960, p. 101

[851] Orbán 1864

[852] Sebestyén 1915, pp. 118–119

[853] Ferenczi 1971

[854] Ráduly 2008c, pp. 14–15

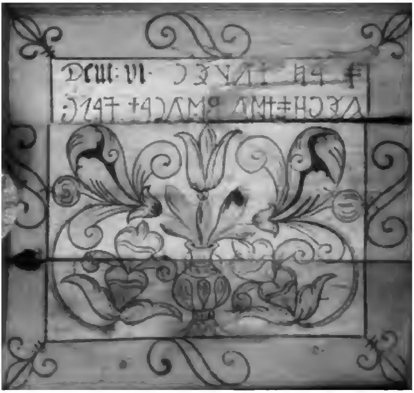

Figure 9.2.8-8: The Énlaka Relic from 1668, photograph by B. Gondos[855]

In 1673, Franciscan friar **J. Kájoni** wrote a so-called Ancient Alphabet and two sentences with SHR (*Fig. 9.2.8-9).*[856] In addition, he wrote another alphabet based on the *Rudimenta* of Telegdi and a collection of ligatures (*Fig. 9.2.8-10*).[857] There are significant differences between the two alphabets. The Ancient Alphabet shows several archaisms. For instance, /g/ is denoted by ǂ. Another feature of the relic is the use of the grapheme ↑ C /t͡s/ also for /t͡ʃ/. This was typical in the Latin-based Old Hungarian orthography (i.e., using *c* for representing /t͡ʃ/) no later than the beginning of the 11th century.[858] This fact proves that the Ancient Alphabet by Kájoni is quite archaic. In addition, the alphabet contains an interesting glyph variant ⸎ of 𐲏 H, as well as the reptile-like symbol ᛯ NAP (see the detailed analysis in *Sec. 3.6.5*).

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[855] Libisch 2004

[856] Sebestyén 1909, p. 245

[857] Sebestyén 1915, p. 126

[858] Kniezsa 1952, p. 15; Vékony 2004a, p. 106

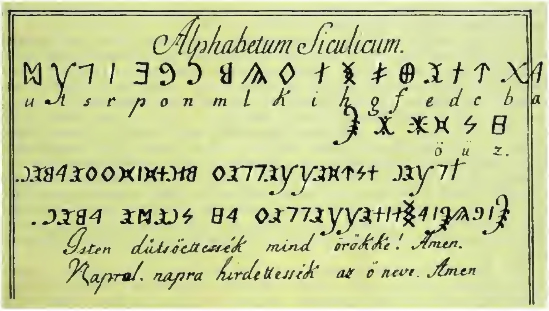
Alphabetum Siculicum.
u t s r p o n m l k i h g f e d c b a
ö ü z.
Isten dütsöeltessék mind örökké! Amen.
Napról. napra hirdettessék az ö neve. Amen

Figure 9.2.8-9: The Ancient Alphabet and Sentences by J. Kájoni (1673)

According to Vékony, this Ancient Alphabet could be the alphabet from an earlier version of the Rovash Calendar (*Fig. 9.2.6-4*). These alphabets keep the order of the letters of the Latin-based Old Hungarian alphabets from the 12th century.[859] The Kájoni Ancient Alphabet supports that in the earliest time of Szekely-Hungarian Rovash, 𐲣 SIMPLE R /r/ was used instead of 𐲢 R /r/. According to archaeologist–historian Vékony, the symbol ⋇ could be a ligature of 𐲂 B /b/ and 𐲇 D /d/.

Kájoni's second alphabet is based on Telegdi's *Rudimenta*. It contains the calligraphic glyph variants 8 and f of the graphemes 𐲨 TRIPLE TY and 𐲇 D (*Fig. 9.2.8-10*).

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[859] Vékony 1992b, p. 289

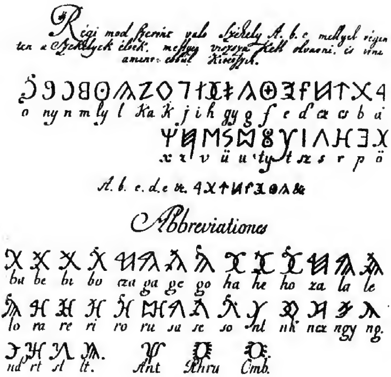
Régi mod szerint való Székely A. b. c. mellyel régen az Székelyek éltek: mellyet visszafelé kell olvasni: és irni amint: elöl Kiteszik.
o ny n m ly l Ka K j i h gy g f e d cz cs b a
x z v ü u ty t sz s r p ö
A. b. c. d. e &c.
Abbreviationes
bu be bi bo cza ga ge go ha he ho za la le
lo ra re ri ro ru sa se so nd nk nca ngy ng.
nd rt st lt. Ant Christu Cmb.

Figure 9.2.8-10: The second alphabet and ligatures by Kájoni (1673)

Harsányi Alphabet: In 1703, Hickes published a book in Oxford with a "*Hunnic alphabet*" originating from J. Harsányi in 1678 (*Fig. 9.2.8-11*).[860] The alphabet was discovered by Fischer.[861] In the relic are the glyph variants ⧖ of 𐲪 U and ⋇ of 𐲨 TRIPLE TY.

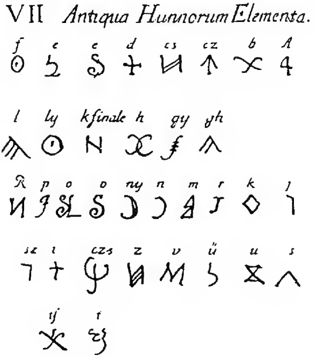
VII Antiqua Hunnorum Elementa.
f e e d cs cz b A
l ly k finale h gy gh
K p o o ny n m r k j
sz i czs z v ü u s
ty t

Figure 9.2.8-11: Harsányi's Alphabet (1678)

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[860] Hickes 1703; Sebestyén 1915, p. 112

[861] Fischer 1889

9.2.9. The 18th century

M. Bél: In 1718, an SHR alphabet and the Lord's Prayer written in SHR (*Fig. 9.2.9-1*) were published in Bél's book titled *De vetere literatura hunno-scythica exercitatio.*[862] One interesting feature of the alphabet is the use of two individual graphemes for /ɛ/ and /eː/, which was a step in the development of SHR towards using individual graphemes for each Hungarian vowel. He applied the glyph Ↄ for /eː/, which was invented by the Miskolci Csulyak brothers (*Fig. 9.2.8-4* and *9.2.8-5*).

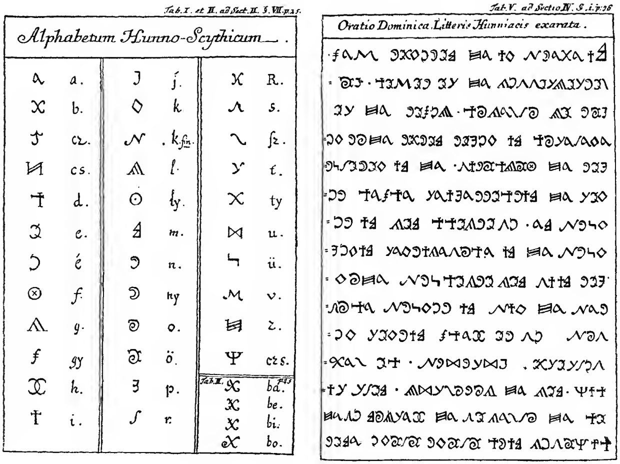
Tab. I. et II. ad Sect. II. §. VII. p. 25.
Alphabetum Hunno-Scythicum.
a. b. cz. cs. d. e. é f g. gy h. i.
j. k k.fin. l. ly. m. n. ny o. ö. p. r.
R. s. ſz. t. ty u. ü. v. z. czs.
Tab. II. ba. be. bi. bo.
Tab. V. ad Sectio IV. §. i. p. 36
Oratio Dominica Literis Hunniacis exarata.

Figure 9.2.9-1: Alphabet and the Lord's Prayer by Bél (1718)

Hensel's map: In 1730, German theologian and philologist G. Hensel constructed the map of languages *(Fig. 9.2.9-2).*[863]

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[862] Bél 1718

[863] Hensel 1730

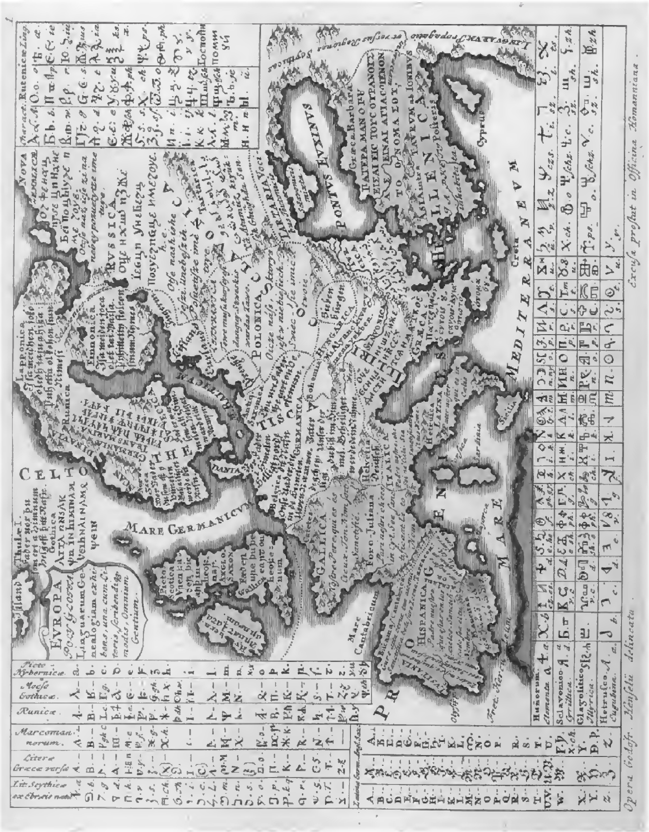
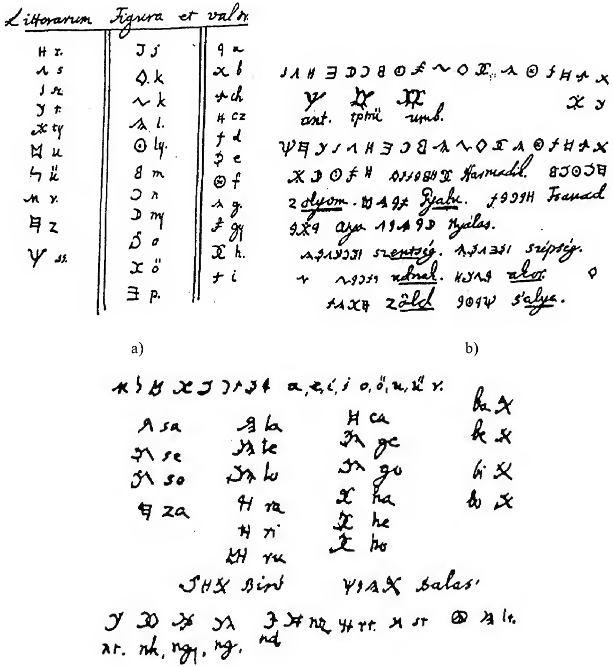


Figure 9.2.9-2: The “Lord’s Prayer” map by Hensel (1730)

In the area of Hungary, the Lord’s Prayer is written in Hungarian with the Latin-based Old Hungarian orthography. Furthermore, in the first row of the map’s bottom table, an SHR alphabet is presented. Hensel called it *Hunnorum* ‘Hunnic’, which corresponds to the Hungarian name for the Szekely-Hungarian Rovash of that time.

P. Bod copied Telegdi's *Rudimenta* in 1739. *Fig. 9.2.9-3* presents part of it with three reptile-like symbols: ANT, TPRU, and AMB (in the relic: '*umb*').[864]


Litterarum Figura et valor
ant. tprü umb.

a) b)

c)

Figure 9.2.9-3a, b, c: The Alphabet and Script Samples by Bod (1739)

Marosvásárhely: On the 2nd of May 1753, important SHR documentation was created in the Manuscript of Marosvásárhely (Szekelyland, Romania), for instance, the so-called **Dési Alphabet** containing a detailed list of ligatures (called "*abbreviations*") (see *Fig. 9.2.9-4*) and the **Dobai Alphabet** (see *Fig. 9.2.9-5*).[865]

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[864] Musnai 1936, pp. 229–233; Ferenczi 1997, p. 13 & pp. 56–57

[865] Sebestyén 1909

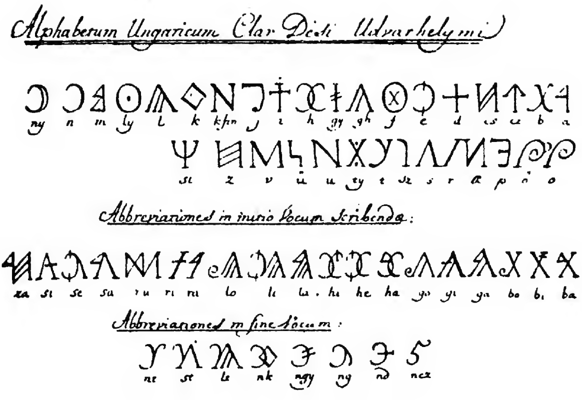
Alphabetum Ungaricum Clar. Dési Udvarhelymi
ny n m ly l k kfn j i h gy gh f e d cs cz b a
sz z v ü u ty t tz s r ä p ö o
Abbreviationes in initio vocum scribendæ:
za si se su ru ri ru lo li lu hi he ha gyo gyi gya bo bi ba
Abbreviationes in fine vocum:
nt st lt nk ngy ny nd ncz

Figure 9.2.9-4: Alphabet and ligatures of the Dési Alphabet (1753)

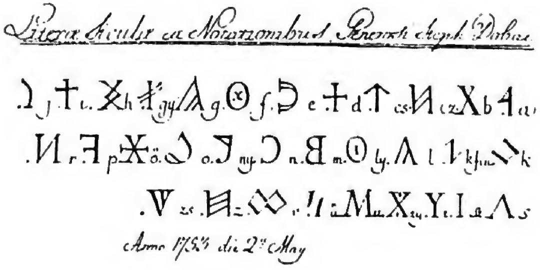

Figure 9.2.9-5: The Alphabet by I. Dobai (1753)

P. Bod: Between 1759 and 1769, P. Bod made a stone inscription that today is part of the wall of the reformed church in Fogaras (Transylvania, Romania) (see *Fig. 9.2.9-6*).[866]

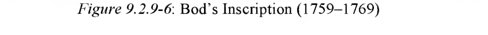

Figure 9.2.9-6: Bod's Inscription (1759–1769)

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[866] Sebestyén 1909, p. 266

According to the meaning of the rovash inscription, the relic was made in Magyarigen Village (Transylvania) (see *Table 9.2.9-1*). In the inscription, the 𐳐𐳍𐳉𐳙 /igɛn/ is the shortened name of Magyarigen.

Written with normalized Szekely-Hungarian Rovash font	𐳂𐳛𐳇 𐳠𐳋𐳦𐳉𐳢 𐳓𐳋𐳥𐳦𐳉𐳦𐳦𐳉 𐳐𐳍𐳉𐳙𐳂𐳉𐳙
Phonetic transcription	/bod peːtɛr keːsiːtɛttɛ igɛnbɛn/
Translation from Hungarian	Peter Bod made it in Igen.

Table 9.2.9-1: Transcription of Bod's Inscription

Letter of K. G. is an SHR relic from 1770 (*Fig. 9.2.9-7*).[867] The monogram of the writer is K. G.

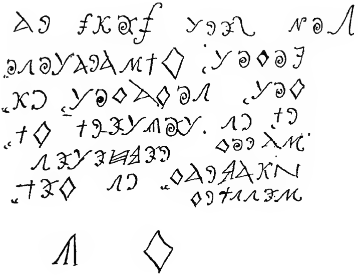

Figure 9.2.9-7: The letter of K. G. (1770)

Patakfalvi Bible: There is a two-page SHR text in a Bible (*Fig. 9.2.9-8*). The Bible was published in 1776, indicating that the text is no older than this. The relic was discovered by S. Patakfalvi, Gy. Albrecht, and M. Forrai, Jr. The text describes a law of inheritance in Szekelyland.[868] It was transcribed by Tisza, Rumi, Sólyom, and Koszta with contributions from Kormos, Hosszú, Pasztuha-Tocsek, and Vér in 2009.[869] Detailed scientific work was done by Hosszú.[870] Rumi and Tisza demonstrated that the entry in the Bible following the SHR text is dated to September 1785, hence the SHR text was written no later than this.

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[867] Sebestyén 1909, p. 267

[868] Hosszú 2010b, *passim.*

[869] Tisza et al. 2009

[870] Hosszú 2009

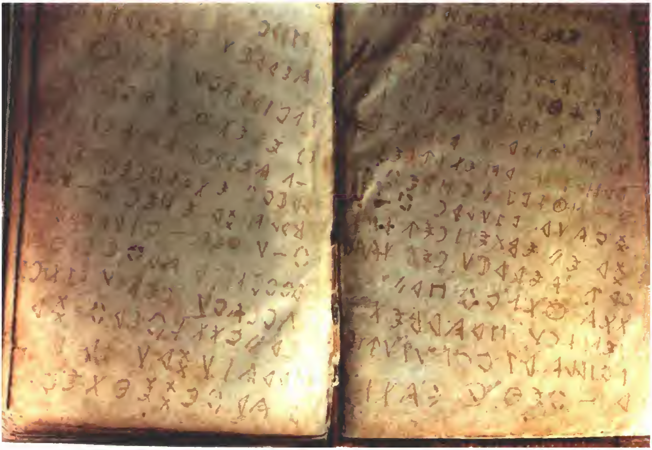

Figure 9.2.9-8: The Szekely-Hungarian Rovash text in the Patakfalvi Bible (1776–1785)[871]

There are several interesting features of this rovash inscription: the order of the rows is *bottom-up*; the duplication of the grapheme ◁ A /ɒ/ represents AA /aː/; and there are special glyph variants ◁, ⁻, ⋛, ⍀, and ⤫ of the regular SHR 𐲀 A /ɒ/, 𐲋 EE /eː/, ≷ OPEN OE /ø/, 𐲦 T /t/, and ⌘ CLOSED OE-UE /y/.

9.2.10. The 19th century

M. Révai: In 1803, Szekely-Hungarian Rovash ligatures called *"Abbreviationes"* were published by Révai (*Fig. 9.2.10-1*).[872]

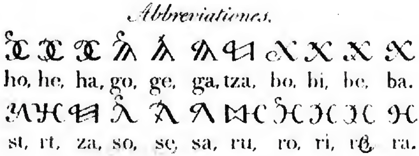
Abbreviationes.
ho, he, ha, go, ge, ga, tza, bo, bi, be, ba.
st, rt, za, so, se, sa, ru, ro, ri, re, ra.

Figure 9.2.10-1: Szekely-Hungarian Rovash ligatures by M. Révai (1803)

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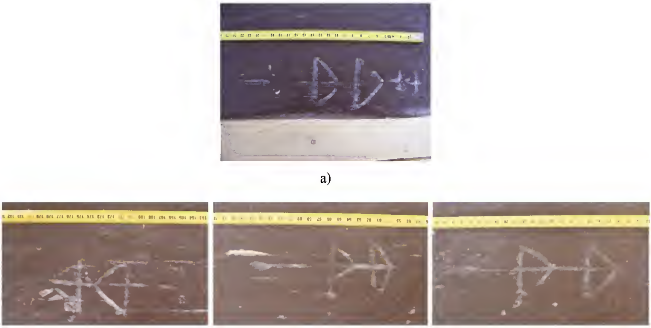
[871] Tisza et al. 2009

[872] Révai 1803, p. 146, *Table II*

Csíkszentlélek: The steeple of the church in Csíkszentlélek (Szekelyland, present-day Romania) was built in 1806. The steeple was used for funeral ceremony in the church. Some rovash inscriptions carved on the built-in pews in the steeple were discovered by László Rostás and Tamás Rumi in 2013. The images—photographed by Zs. Esztány in 2013—are presented in *Fig. 9.2.10-2*; the drawing of the inscriptions in *Fig. 9.2.10-3*.



a)

b)

Figure 9.2.10-2: Carved rovash inscriptions in Csíkszentlélek (after 1806): *a)* one inscription on the right side pew, and *b)* three inscriptions with ligatures on the left side pew.[873]

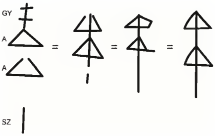


Figure 9.2.10-3: Drawings of the Csíkszentlélek inscriptions, made by T. Rumi in 2013.[874]

The inscriptions are written vertically, three versions use ligatures, and the duplication of the glyph 𐳀 represents AA /aː/: 𐳀𐳀. The duplicated glyph 𐳀𐳀 is turned in the inscriptions. Rumi deciphered the inscriptions: 𐳎𐳀𐳀𐳥 /ɟaːs/ ‘mourning’.

Nagybánya: Prior to 1821, in the parish registry of Nagybánya (present-day Romania) is an SHR alphabet[875] and the text of the “Lord’s Prayer” (*Fig. 9.2.10-4*).

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[873] Rumi, Tamás 2013, *Personal communication*

[874] Rumi, Tamás 2013, *Personal communication*

[875] Gergely 1895; Sebestyén 1909, pp. 268–270

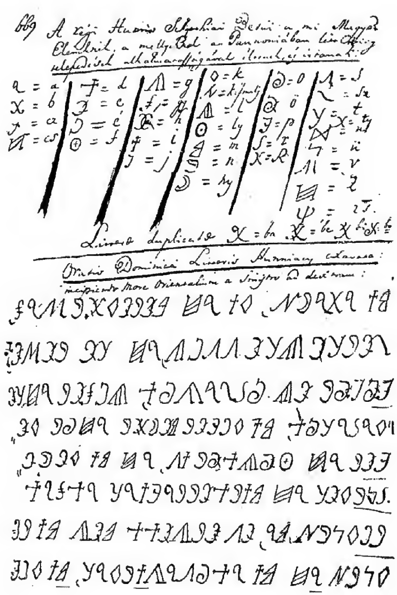

Figure 9.2.10-4: The alphabet and text of the "Lord's Prayer" in Nagybánya (prior to 1821)

K. Szabó: In the 19th century, research of the Szekely-Hungarian Rovash script became part of the academic sciences. As linguist Sándor stated,[876] the scientific description of SHR by Szabó was one of the earliest works.[877]

Book of Áron Kova: In 1873, Somogyi published two booklets (later republished by Sebestyén[878]) with SHR inscriptions.[879] One of them—presented in *Fig. 9.2.10-5*—starts with the expression ƷMDꭓ◊ ƆƆ⁄44 4MƆ◊ /kovɒ aːron køɲvɛ/ 'Book of Áron Kova'. In this relic, the duplication of some graphemes (namely A, K, and T) is marked with the ◌᷄ COMBINING MACRON-ACUTE as a duplication mark. In addition, calligraphic variants of the regular SHR graphemes are used, e.g. the glyph of the EE /eː/ is Ꞇ instead of Ɂ.

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[876] Sándor 1991

[877] Szabó 1866a & 1866b

[878] Sebestyén 1909, p. 294

[879] Somogyi 1873

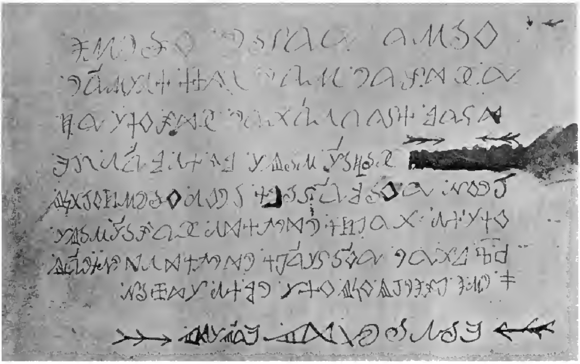

Figure 9.2.10-5: A page from the "Book of Áron Kova" (prior to 1873)[880]

K. A. Fischer (1842–1928) published his scientific book in 1889, *The Hunnic-Hungarian writing and its surviving relics*. Fischer included an SHR inscription on its front cover.[881]

Rovash numeral sticks: From ancient times to the beginning of the 20th century, Hungarian shepherds used rovash numerals inscribed on sticks for the settlements' roundup of sheep, horses, and cattle. The owner and the shepherd incised the number of the animals to be herded onto a stick, which was then cut horizontally. One piece remained with the owner, the other one with the shepherd. At the time of the annual setting, they joined the two parts of the stick and were able to check the original number of animals.[882] *Fig. 9.2.10-6, 7, 8,* and *9* give examples of the rovash numeral sticks.

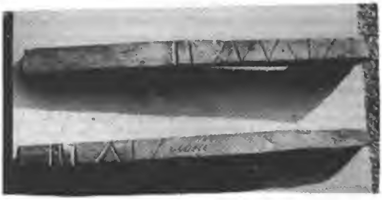

Figure 9.2.10-6: Rovash numeral sticks from Kiskunhalas (end of the 19th century)[883]

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[880] Sebestyén 1909, p. 294

[881] Fischer 1889

[882] Sebestyén 1909; Lükő 1938

[883] Forrai 1994

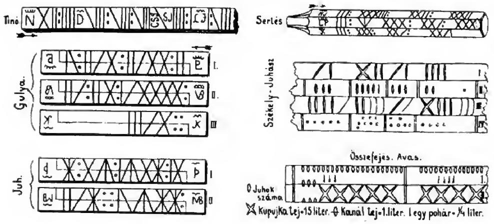

Figure 9.2.10-7: Rovash numeral sticks used by shepherds (end of the 19th century or beginning of the 20th century)[884]

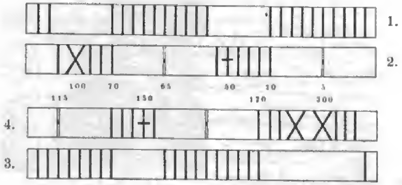

Figure 9.2.10-8: A rovash numeral stick with boustrophedon direction from Sepsiszentkirály (Szekelyland, Romania)[885]

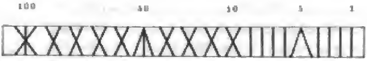

Figure 9.2.10-9: Sequence of rovash numerals up to 100 on a stick[886]

9.2.11. The 20th century

In the 20th century, Szekely-Hungarian Rovash became popular. Several SHR-related scientific books were published, and the number of people using SHR for private (letter writing) and community purposes (Boy Scout movement) dynamically increased. *Fig. 9.2.11-1* presents a **Scout rovash carving knife** used in the 1930s. The knife is the property of M. Horváth; the image is from **Á. Zubrits**.[887] According to the Latin-based Hungarian inscription on the knife, it was sold in the "Scout Shop," Budapest. On the relic are examples of the SHR ◊ Q, M̲ W, and ˥ Y.

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[884] Hungarian Ethnic Cyclopaedia 1977–1982

[885] Sebestyén 1909, p. 16

[886] Sebestyén 1909, p. 51

[887] Horváth, M. 1933

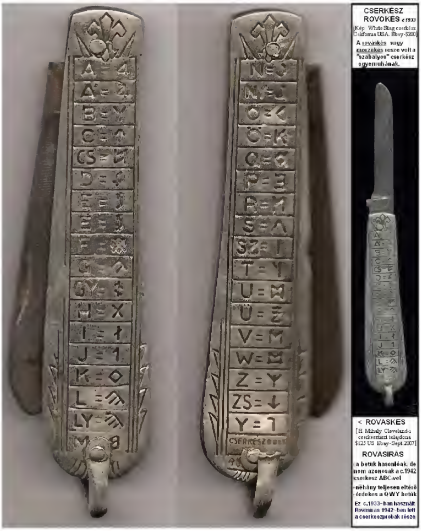
CSERKESZ
ROVOKES c 1933
[Kép White Stag cserkész California USA. Ebay-$200]
A rovaskés vagy morzekes resze volt a "szabalyos" cserkész egyenruhának.
< ROVASKES
[H. Mihaly Cleveland-i cserkesztiszt tulajdona $125 US Ebay-Sept.2007]
ROVASIRAS
a betuk hasonlóak, de nem azonosak a c.1942 cserkesz ABC-vel
-néhány teljesen eltérö
-érdekes a QWY betük
Ez c.1933-ban használt Rovasiras 1942-ben lett a cserkeszprobak része

Figure 9.2.11-1: A carving knife used by Hungarian scouts (1930s)[888]

In 2009, F. Sólyom discovered the alphabets and examples of **D. Verpeléti Kiss** (1933 and 1935) (see *Fig. 9.2.11-2a* and *2b*).[889] All graphemes are drawn with straightforward and slanted lines. According to Zubrits, these alphabets are the ancestors of the rovash alphabet widely used by the **Hungarian Scouts Association Abroad**.[890] In the middle of the 20th century, the Hungarian Scouts adopted SHR as necessary knowledge, and even today this tradition is alive. In *Fig. 9.2.11-2b,* the Szekely-Hungarian Rovash DZ /d͡z/ and DZS /d͡ʒ/ are used, being the first examples of the SHR graphemes /d͡z/ and /d͡ʒ/, respectively.

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[888] Horváth, M., ca. 1933, Zubrits 2009, p. 310

[889] Sólyom, Ferenc 2009: *Personal communication partly through Tamás Rumi*

[890] Zubrits, Árpád Andrew 2009-2010: *Personal communication*

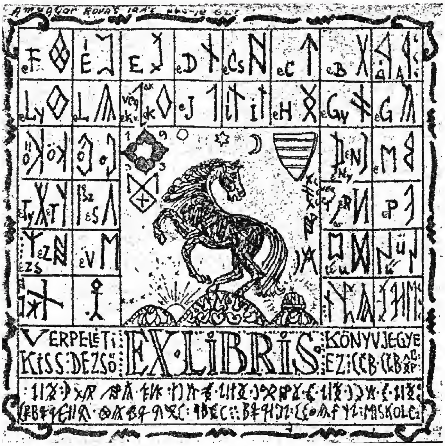

Figure 9.2.11-2a: Alphabet and examples by Verpeléti Kiss (1933)

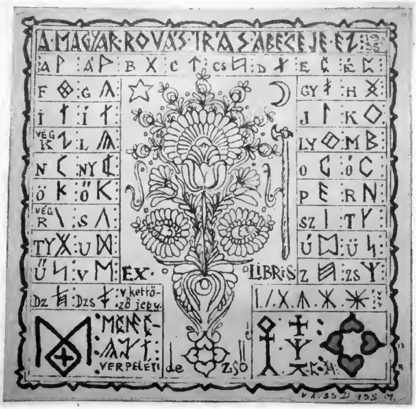

Figure 9.2.11-2b: Alphabet and examples by Verpeléti Kiss (1935).

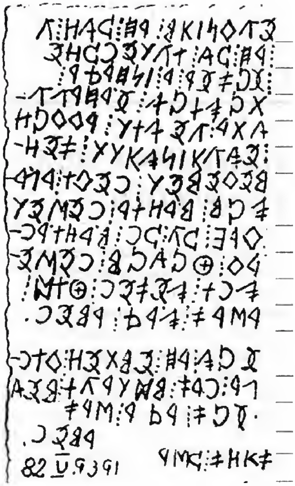

Figure 9.2.11-3: Votive document recorded by **É. György** (1939), the document was provided by Gy. Libisch.

Figure 9.2.11-4: **Signature of Z. Maghy** from 1965, on his picture titled 'Riverbank".[891] Its interesting feature the use of individually shaped SHR grapheme for Y.

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[891] Axio.art web site, retrieved in 2013 from http://axioart.com/tetel/maghy-zoltan-1903-1999-folyopart

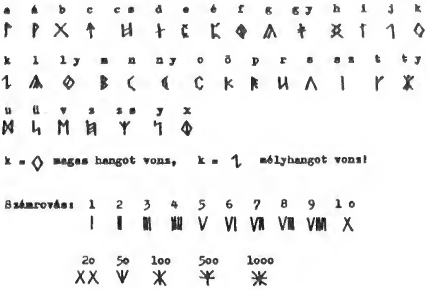
a á b c cs d e é f g gy h i j k
k l ly m n ny o ö p r s sz t ty
u ü v z zs y x
k = ◊ magas hangot vonz, k = 1 mélyhangot vonz!
Számrovás: 1 2 3 4 5 6 7 8 9 10
20 50 100 500 1000

Figure 9.2.11-5: The Alphabet by **Z. Bárczy**, 1971.[892] He proposed and used SHR graphemes for X, Y, and FIVE HUNDRED in his textbook.

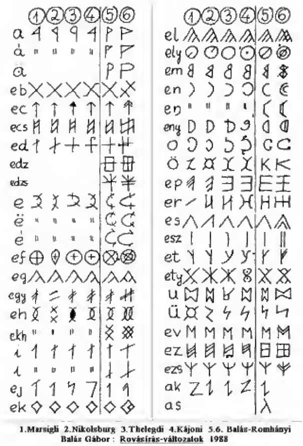
①②③④⑤⑥
a á a eb ec ecs ed edz edzs e ë é ef eg egy eh ekh i í ej ek
el ely em en eŋ eny o ö ep er es esz et ety u ü ev ez ezs ak as
1.Marsigli 2.Nikolsburg 3.Thelegdi 4.Kájoni 5.6. Balás-Romhányi
Balás Gábor : Rovásírás-változatok 1988

Figure 9.2.11-6: A book from 1988 comparing SHR alphabets, including those by **G. Balás** and **B. Romhányi**,[893] which contain ligatures for marking the duplication of consonants.

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[892] Bárczy 1971

[893] Balás 1988

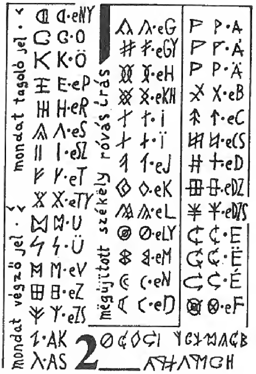
mondat tagoló jel
mondat végző jel
mëgújított székely rovásírás
eNY
O
Ö
eP
eR
eS
eSZ
eT
eTY
U
Ü
eV
eZ
eZS
AK
AS
eG
eGY
eH
eKH
I
Ï
eJ
eK
eL
eLY
eM
eN
eD
A
Á
Ä
eB
eC
eCS
eD
eDZ
eDZS
E
Ë
É
eF
2

Figure 9.2.11-7: **Alphabet by G. Balás** (made in 1988).[894]

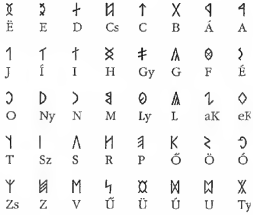
Ë
E
D
Cs
C
B
Á
A
J
Í
I
H
Gy
G
F
É
O
Ny
N
M
Ly
L
aK
eK
T
Sz
S
R
P
Ő
Ö
Ó
Zs
Z
V
Ű
Ü
Ú
U
Ty

Figure 9.2.11-8: The **Unified Alphabet by Gy. Libisch** (1989)[895]

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[894] Balás 1993, p. 30

[895] Libisch 1998

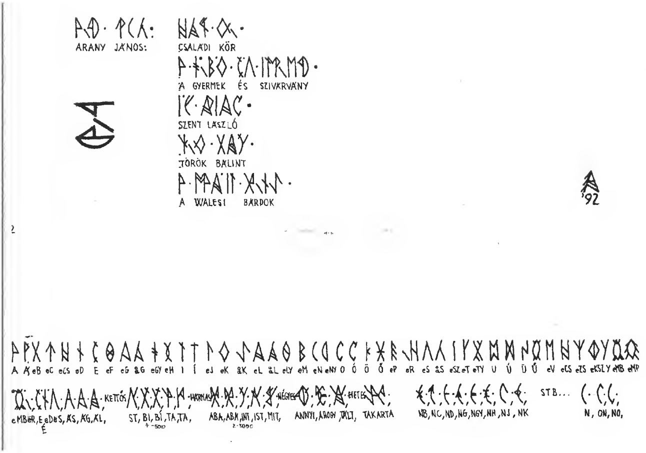

ARANY JÁNOS:
CSALÁDI KÖR
A GYERMEK ÉS SZIVÁRVÁNY
SZENT LÁSZLÓ
TÖRÖK BÁLINT
A WALESI BÁRDOK
'92
A Á eB eC eCS eD E eF eG ǝG eGY eH I Í eJ eK ǝK eL ǝL eLY eM eN eNY O Ó Ö Ő eP eR eS ǝS eSZ eT eTY U Ú Ü Ű eV eCS eZS eKSZ Y eMB eMP
KETTŐS
HÁRMAS
NÉGYES
HETES
eMBeR, EeDeS, KS, KG, KL,
É
ST, BI, BÍ, TA, TA,
ABA, ABK, ANT, IST, MIT,
ANNYI, ÁROGY, TKLT, TAKARTA
NB, NC, ND, NG, NGY, NH, NJ, NK
STB...
N, ON, NO,

Figure 9.2.11-9: **Alphabet by B. Pál** from 1992.[896]

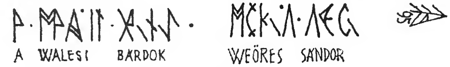


Figure 9.2.11-10: **Inscriptions by B. Pál** from 1992 and 1995 with LTR direction.[897]

In 1993, a short LTR-directed rovash script was carved into a wood chandelier by **F. Máté**, a Szekely wood carver from Vargyas (Szekelyland, Romania), see *Fig. 9.2.11-11*.[898] The wood chandelier is in the Reformed Church of Érd (Hungary). The carved words are the following: 𐳂𐳋𐳓𐳋𐳦 /beːkeːt/ ‘[wishing] peace’; 𐳂𐳛𐳢𐳦 /bort/ ‘[wishing] wine’; and 𐳂𐳫𐳯𐳁𐳦 /buːzaːt/ ‘[wishing] wheat’. These words together add up a Hungarian felicitation phrase. The word 𐳂𐳛𐳢𐳦 is an example of the mixed use of glyphs facing left and right, since the glyph of 𐳦 T /t/ faces the right but the glyphs of 𐳛 O /o/ and 𐳢 R /r/ to the left.

---

[896] Pál 1992

[897] Pál 1992

[898] Libisch, Győző 1995–2009: *Personal communication*

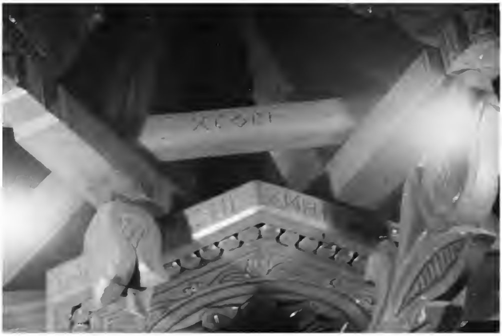


Figure 9.2.11-11: Woodcarving by F. Máté (1993); photograph by A. Kiss (1997)

In 1993, G. Hosszú developed *8-bit encoded* character sets of Szekely-Hungarian Rovash and an appropriate *Rovash Keyboard Layout* on the regular English keyboard *(Fig. 9.2.11-12)*. Hosszú also created fonts for free character sets to download from his Rovash Writing Homepage *(Fig. 9.2.11-13)*.[899] Besides this, he created Word macros for automating transcription to Szekely-Hungarian Rovash.

Q = 𐳟 q = 𐳝	W = 𐳞 w = 𐳣	E = 𐳋 e = 𐳉	R = 𐳩 r = 𐳢	T = 𐳨 t = 𐳦	Y = 𐳭 y = 𐳬	U = 𐳫 u = 𐳪	I = 𐳑 i = 𐳐	O = 𐳜 o = 𐳛	P = 𐳡 p = 𐳠
A = 𐳁 a = 𐳀	S = 𐳥 s = 𐳤	D = 𐳈 d = 𐳇	F = 𐳲 f = 𐳌	G = 𐳎 g = 𐳍	H = 𐳧 h = 𐳏	J = 𐳱 j = 𐳒	K = 𐳔 k = 𐳓	L = 𐳗 l = 𐳖	
	Z = 𐳰 z = 𐳯	X = 𐳕 x = 𐳊	C = 𐳆 c = 𐳄	V = 𐳅 v = 𐳮	B = 𐳃 b = 𐳂	N = 𐳚 n = 𐳙	M = 𐲘 m = 𐳘	? ,	: . = .

Figure 9.2.11-12: Keyboard layout for Szekely-Hungarian Rovash by G. Hosszú (1993)

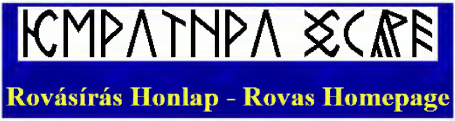


Figure 9.2.11-13: The header of 𐳢𐳛𐳮𐳁𐳤𐳑𐳢𐳁𐳤 𐳏𐳛𐳙𐳖𐳀𐳠 'Rovash Writing Homepage' (1995)

---

[899] Hosszú, website from 1995 to 2011

9.2.12. The 21st century

At the turn of the 21st century, the popularity of Szekely-Hungarian Rovash exceeded any earlier levels. Today, thousands of links point to various rovash websites and the publication of books about rovash is continuously growing. Rovash has appeared in elementary education as well.

In 2001, **S. Vér** developed the Ƀ DZ /d͡z/ and the ¥ DZS /d͡ʒ/ besides previously inventing glyphs for Q, X, Y, and W (*Fig. 9.2.12-1*).[900]

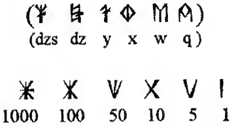
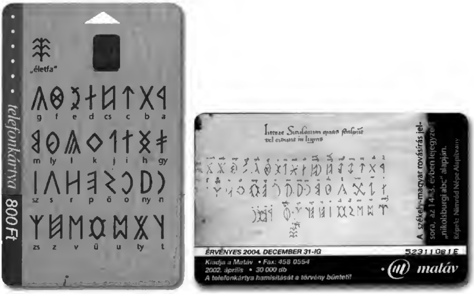


Figure 9.2.12-1: A part of Vér's book titled *Tree of Life*

In April 2002, the Hungarian Telecommunication Company released a **phone card** with SHR alphabets on both sides, as *Fig. 9.2.12-2* presents: *a)* a contemporary SHR alphabet and *b)* the photograph of the Nikolsburg Alphabet (*Fig. 9.2.5-2*).

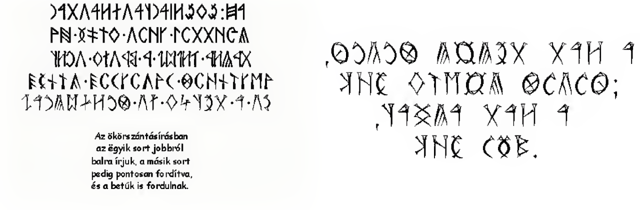

„életfa"
g f e d cs c b a
m ly l k j i h gy
sz s r p ö o ny n
zs z v ü u ty t
telefonkártya
800Ft
ÉRVÉNYES 2004. DECEMBER 31-IG
Kiadja a Matáv • Fax: 458 0554
2002. április • 30 000 db
A telefonkártya hamisítását a törvény bünteti!
matáv
A székely-magyar rovásírás jel-sora, az 1483. évben lejegyzett „nikolsburgi abc" alapján.
Képek: Nimród Népe Alapítvány

a) b)

Figure 9.2.12-2: The two sides of the phone card released in 2002

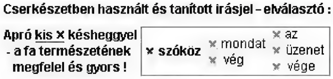
---

[900] Vér 2001



a) b)

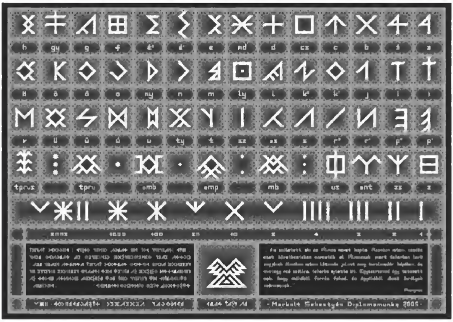
Figure 9.2.12-3a) Explanatory text by N. Jankovich, *b)* poem by S. Weöres, transcribed by Jankovich in 2004 with **boustrophedon direction**[901]



Cserkészetben használt és tanított írásjel - elválasztó :

Apró kis × késheggyel - a fa természetének megfelel és gyors !	× **szóköz**	× mondat × vég	× az × üzenet × vége

Figure 9.2.12-4: A manual for scouts, written by Zubrits in 2001. It describes the roles of × WORD SEPARATOR CROSS, ⁑ DOUBLE CROSS FULL STOP (meaning '*sentence end*'), and ⁂ END OF MESSAGE MARK.[902]


h
gy
g
f
é
é
e
nd
d
cs
c
b
á
a
ö
ő
ó
o
ny
n
m
ly
l
k
k
j
í
i
r
ü
ű
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u
ty
t
sz
sz
s
r
r
p
p
tprus
tpru
amb
emp
mb
us
ant
zs
z
1000
100
50
10
5
4
3
2
1
Markolt Sebestyén Diplomamunka 2005

Figure 9.2.12-5: Alphabet and text by **S. Markolt** in his diploma work, designed for ticker displays in 2005[903]

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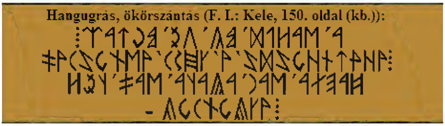
[901] Jankovich, website 2004

[902] Zubrits, website

[903] Hosszú, Rumi, & Sípos 2008; Markolt 2005



Hangugrás, ökörszántás (F. I.: Kele, 150. oldal (kb.)):

Figure 9.2.12-6: Part of the **young adult novel *Kele*** by I. Fekete with boustrophedon direction[904]

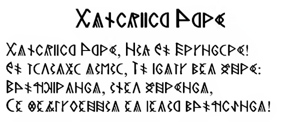
	**Blessed Lady Our Mother** Blessed Lady Our Mother, Eternal Great Patron! In our great need, our homeland beseeches you: Our dear Hungary, our dear homeland, Do not abandon us, your poor Hungarians!

Figure 9.2.12-7: The Christian song "Blessed Lady Our Mother" using LTR ligatures (15th August 2008)[905]

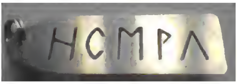


Figure 9.2.12-8: **Metal key-holder** with SHR made by L. Schédl in 2008.[906] Since the metal plate is cut through, the script is LTR from one side and RTL from the opposite side. The text on it is 𐳢𐳛𐳮𐳁𐳤 'Rovash'.

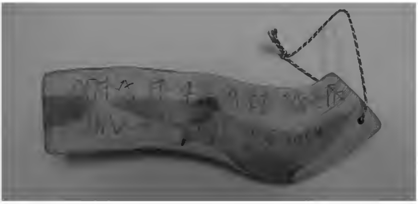


Figure 9.2.12-9: **Rovash woodcarving** made by L. Schédl (2008), product developer and wood carver. Schédl reconstructed the rovash carving technique of the medieval times.[907]

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[904] Scout Patrol "Szí", website

[905] Hosszú, website from 1995 to 2011

[906] Schédl 2009

[907] Schédl 2009; Hosszú, Rumi, & Sípos 2008

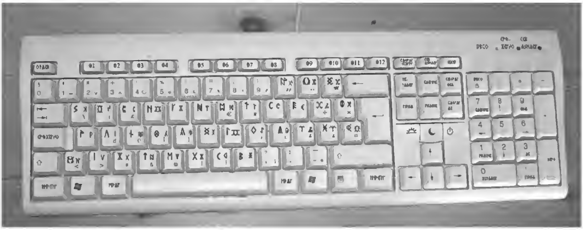

Figure 9.2.12-10: The design of the **SHR Keyboard** by Cs. Dávid (2008) applying the keyboard map of *Fig. 9.2.11-12.*[908]

Fig.6.2.12-12a) and *b)* show the parts of the 2009 printed table-calendar made by Forrai, Jr. in 2008, in which ligatures and reptile-like symbols were also used.[909]

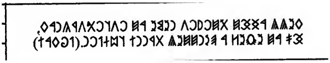

Figure 9.2.12-11a: A part of a page for the 8th week in the printed table-calendar by Forrai, Jr. (2008)

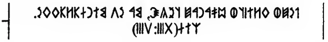

Figure 9.2.12-11b: The page for the 37th week in the printed table-calendar by Forrai, Jr. (2008). Its transcription is .ƆOOXHX+Ɔ†Ǝ ΛƧ 4Ǝ ,ᕕΛƸY ⴱ4Ɔ4‡ⴲ ΦYII†HO ΦⴱƧ1 \ (IIIV :IIIX)+†Y 'Jesus Christ is the same yesterday, today, and forever / Heb (13:8)'.

In order to respond to the rapidly growing need for rovash content, a modern transcription-edition system was developed by L. Sípos, T. Somfai, and T. Rumi in 2009. This linguistic-technical invention made it possible to quickly and easily publish longer SHR texts. The first books were *Eclipse of the Crescent Moon* (the most popular historical novel in Hungary, written by G. Gárdonyi. See *Fig. 9.2.12-12a*) and the children's book *Seven and Seven Hungarian Folk Tales* (*Fig. 9.2.12-12b*). *Eclipse of the Crescent Moon* was fully transcribed into SHR and was published in 2009. This book is the first novel published exclusively with SHR graphemes. It is noteworthy that the cover page of *Eclipse of the Crescent Moon* contains special ligatures of Szekely-Hungarian Rovash words called **letter-architecture**.

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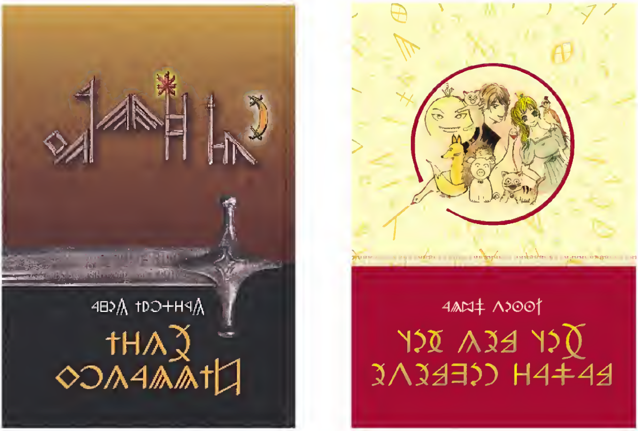
[908] Dávid 2008

[909] Forrai, Jr., website 2008



a) *b)*

Figure 9.2.12-12: Cover pages of the books *a)* ***Eclipse of the Crescent Moon*** and *b)* ***Seven and Seven Hungarian Folk Tales***, transcribed to SHR by Rumi, Sípos, and Somfai[910]

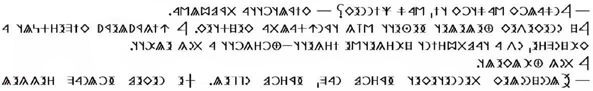


Figure 9.2.12-13a: A part of page 160 of the book *Eclipse of the Crescent Moon* (2009), in which the SHR ￥ DZS /$\widehat{d ʒ}$/ is used.[911]

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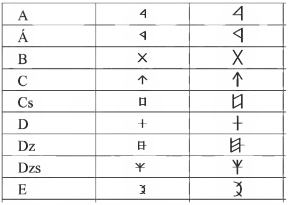
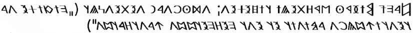
[910] Rumi, Sípos, & Somfai 2010, cover page

[911] Rumi, Sípos, & Somfai 2009



A	𐳀	𐲀
Á	𐳁	𐲁
B	𐳂	𐲂
C	𐳄	𐲄
Cs	𐳆	𐲆
D	𐳇	𐲇
Dz	ᛔ	ᛔ
Dzs	ᛉ	ᛉ
E	𐳉	𐲉

Figure 9.2.12-13b: Part of the alphabet page of the book *Eclipse of the Crescent Moon* with the glyphs used in the book; lower-case graphemes in the second column differ from the upper-case graphemes in the third column.[912] On this page the SHR ᛔ DZ /d͡z/ and ᛉ DZS /d͡ʒ/ are used.



40← ;(*pixide sanciatus ambos testiculos amisit et est perpetuus castratus*)

Figure 9.2.12-13c: A part of the book *Eclipse of the Crescent Moon* (2009), where the ◊ X /ks/ is used in the SHR transcription of the Latin word "*pixide*" in the first row.[913]

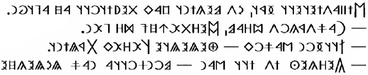


Figure 9.2.12-13d: A part of the book *Eclipse of the Crescent Moon* (2009) where the 𐲐 Y /i/j/ and ᛗ W /v/ are used.[914]

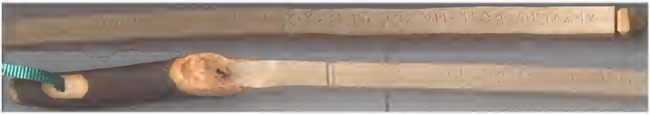


Figure 9.2.12-14: Parts of the **Hungarian National Anthem** carved by Á. Zubrits in 2009. This carving shows the traditions of the Hungarian scouts in western countries. Note the use of the special × WORD SEPARATOR CROSS and ⁑ DOUBLE CROSS FULL STOP.[915]

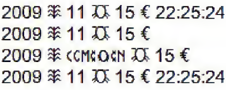


Figure 9.2.12-15: Examples of Gy. Giczi for the use of the **reptile-like symbols** ⁂ TPRUS /eːv/ 'year', ⌘ TPRU /hoːnɒp/ 'month', and € NAP /nɒp/ 'day'.[916]

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[912] Rumi, Sípos, & Somfai 2009

[913] Rumi, Sípos, & Somfai 2009

[914] Rumi, Sípos, & Somfai 2009

[915] Zubrits, Árpád Andrew 2009-2010: *Personal communication*

Fig. 9.2.12-16 shows the emblem of the **First Hungarian Student Satellite**, on which the name of the satellite is written in SHR on the right side and with Latin-based letters on the left side. A copy of this emblem was carried to the International Space Station (ISS) by C. Simonyi (of Microsoft fame) on his second trip into space. On the left side of *Fig. 9.2.12-16*, the Hungarian sentence written by C. Simonyi is: "*Az ISS fedélzetén aláírva*" 'Signed on-board the ISS'. The significance of this occasion is that this was the first time Szekely-Hungarian Rovash appeared in space. This SHR inscription was carried by the Soyuz TMA-14 spacecraft and arrived back in the service module in 2009. The Szekely-Hungarian Rovash inscription orbited the Earth 267 times, according to Simonyi.[917]

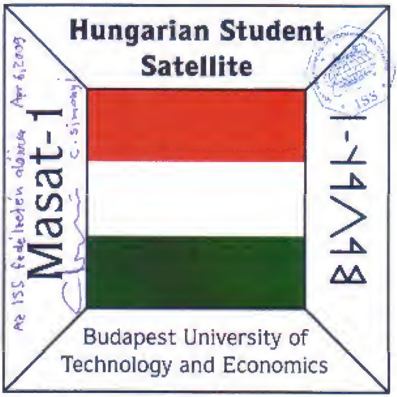
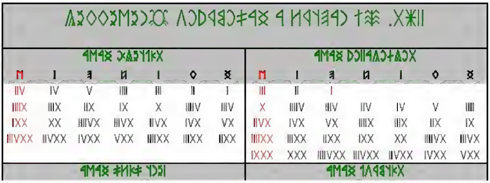

Hungarian Student Satellite
Masat-1
Az ISS fedélzetén aláírva Apr 6, 2009
C. Simonyi
ISS
Budapest University of Technology and Economics

Figure 9.2.12-16: The emblem of the First Hungarian Student Satellite with the signature of C. Simonyi.



IIV	IV	V	IIII	III	II	I
IIIIX	IIIX	IIX	IX	X	IIIIV	IIIV
IXX	XX	IIIIVX	IIIVX	IIVX	IVX	VX
IIIVXX	IIVXX	IVXX	VXX	IIIIXX	IIIXX	IIXX

III	II	I				
X	IIIIV	IIIV	IIV	IV	V	IIII
IIVX	IVX	VX	IIIIX	IIIX	IIX	IX
IIIIXX	IIIXX	IIXX	IXX	XX	IIIIVX	IIIVX
IXXX	XXX	IIIIVXX	IIIVXX	IIVXX	IVXX	VXX

Figure 9.2.12-17: **Wall-calendar** for 2010 designed by G. Rózsa, using TPRU /ho:nɒp/ and TPRUS /e:v/.[918]

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[916] Giczi 2009

[917] Rumi, Tamás 2009: *Personal communication*

[918] Rózsa 2009

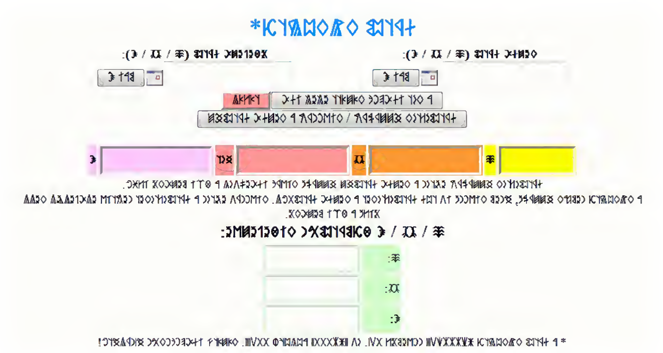
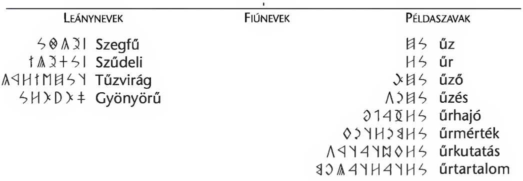


Figure 9.2.12-18: **Date calculator** by G. Kliha (2010).[919] It calculates the length of time between two dates and uses reptile-like symbols and historical ligatures.



LEÁNYNEVEK	FIÚNEVEK	PÉLDASZAVAK
Szegfű		űz
Szűdeli		űr
Tűzvirág		űző
Gyönyörű		űzés
		űrhajó
		űrmérték
		űrkutatás
		űrtartalom

Figure 9.2.12-19: Part of page 101 in the book ***Rovash Fundamentals*** (2010), where OPEN UEE /yː/ is used.[920]

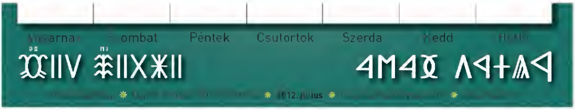


Figure 9.2.12-20: Bottom of a rovash calendar and rovash ABC educational panel (2011) with the reptile-like symbols TPRU /hoːnɒp/ 'month' and TPRUS /eːv/ 'year'.[921]

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[919] Kliha 2010, website
[920] Rumi & Sípos 2010
[921] Rumi & Sípos 2011

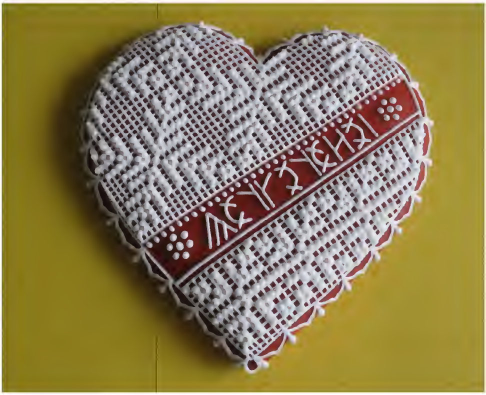

Figure 9.2.12-21: **Gingerbread heart** with Szekely-Hungarian Rovash inscription—altering the direction of the letter 𐳯 E for artistic purposes—by Anita Kovács (2012).[922]

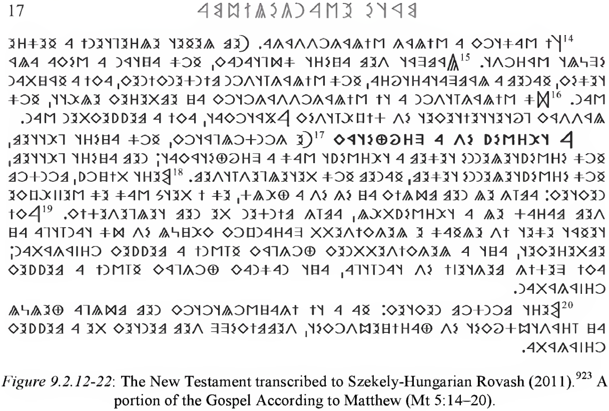

Figure 9.2.12-22: The New Testament transcribed to Szekely-Hungarian Rovash (2011).[923] A portion of the Gospel According to Matthew (Mt 5:14–20).

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[922] Sípos, László 2012: *Personal communication*

[923] Újszövetség székely-magyar rovásra átírva [New Testament transcribed to Szekely-Hungarian Rovash] 2011

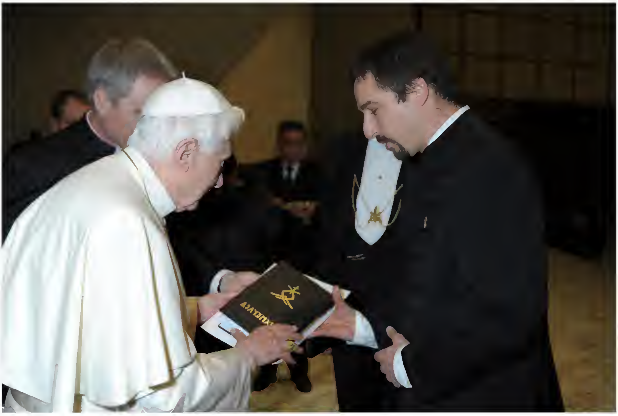

Figure 9.2.12-23: László Sípos, chairman of the Rovas Foundation, presented the New Testament transcribed to Szekely-Hungarian Rovash to Pope Benedict XVI in February15th, 2012 in Vatican City. Photograph by L'Osservatore Romano[924]

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[924] Sípos, László 2012: *Personal communication*

Appendix A: Phonetic notations

International Phonetic Alphabet (IPA) symbols are used in this book. However, for Turkic inscriptions, instead of the IPA /ɯ/, the /ï/ is applied to represent the sound "*velar ï*", since the corresponding Turkic sound at that time has not yet been accurately determined.[925] Alternative transcriptions and Hungarian orthographic symbols are listed in *Table A-1*.[926] The angled brackets of the last column contain the alternative names of the sounds.

In the Ancient Hungarian linguistic period (*Table C-1*) the sound /β/ was a phoneme of the Hungarian language. In the Old Hungarian orthography (*Table C-2*) the letters *w, u,* and *v* represented both consonants (including /β/) and vowels. However, *w* represented only one consonant: /β/.[927] Recently, linguist E. Zelliger used *w* for representing /β/ in her scientific works.[928] Therefore, in this book *w* is applied as an *orthographic symbol*, in cases when rovash inscriptions are Latinized. For instance, '*woshudu*' is the Latinized forms of the Carpathian Basin Rovash >Ѳ⌇1 /βoʃᵘdᵘ/ (*Table 7.2.9-1*). Similarly, the digraph *gh* is used in the Latin transliteration of the sound /ɣ/.

According to the Turkic phonology, Danka stated that in the Old Turkic language, there were not velar but uvular fricatives.[929]

IPA symbol	Hungarian phonetic symbol	Other phonetic symbols	Name
ɒ	a	*Turkic:* å	Upper low [near-open] back rounded vowel
a	ȧ	a	Lower low [open] central unrounded vowel
aː	á	ā	Long lower low [open] central unrounded vowel
ə	ă *(in non-Hungarian words)*	ă	Mid-central vowel
b	b	b	Voiced bilabial plosive
β	β	β	Voiced bilabial fricative
t͡s	c	*Slavic:* c	Voiceless alveolar affricate
ɕ		*Turkic:* ś, ş	Voiceless alveolo-palatal fricative (sibilant)
t͡ʃ	cs	č	Voiceless postalveolar affricate
t͡ʃʲ	ćs		Voiceless palatalized postalveolar affricate
d	d	d	Voiced alveolar plosive
ð	δ	δ	Voiced dental fricative
d͡z	dz		Voiced alveolar affricate

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[925] Vásáry, István 2010–2011: *Personal communication*

[926] Molnár 1970; Siptár & Törkenczy 2000, 2007, p. 51; Siptár, Péter 2010: *Personal communication*; Németh & Olaszy 2010, pp. 77-79; Zelliger, Erzsébet 2010–2011: *Personal communication*

[927] Korompay 2003b, p. 291

[928] Zelliger 2005, p. 12

[929] Danka, Balázs 2013: *Personal communication*

IPA symbol	Hungarian phonetic symbol	Other phonetic symbols	Name
d͡ʒ	dzs	*Turkic:* ǰ, *Arab, Iranian:* ǧ	Voiced postalveolar [palato-alveolar] affricate
d͡ʒʲ	dźs		Voiced palatalized postalveolar affricate
æː		*Slavic:* ě	Long near-open front unrounded vowel
ɛ	e	ä	Upper low [open-mid] front unrounded vowel
ɛ̃		*Slavic:* ę	Nasalized lower mid [open-mid] front unrounded vowel
e	ë	e	Upper mid [close-mid] front unrounded vowel
eː	é	ē	Long upper mid [close-mid] front unrounded vowel
f	f	f	Voiceless labiodental fricative
g	g	g	Voiced velar plosive
ɣ	γ	γ	Voiced velar fricative
ɣ̠			Voiced uvular fricative
ɟ	gy	*Slavic:* ď	Voiced palatal plosive (in older sources affricate)
h		h	Voiceless glottal fricative
ħ	h	ħ	Voiceless pharyngeal fricative
ʕ		ʿ	Voiced pharyngeal fricative
ʔ		ʔ	Voiceless glottal plosive *(Glottal stop)*
x	χ	χ	Voiceless velar fricative
χ	χ́		Voiceless uvular fricative
i	i	i	High [close] front unrounded vowel
ĭ	ĭ *(in non-Hungarian words)*	*Slavic:* ь (*in Protoslavic*)	Extra-short [reduced] high [close] front unrounded vowel
iː	í	ī	Long high [close] front unrounded vowel
ɪ			Near-close near-front unrounded vowel
ɯ, ï	i̮	*Turkic:* ï	High [close] back unrounded vowel *(Unrounded u, Velar i)*
i̯	i̯		Front [palatal] unrounded semivowel [glide]
ɨ		*Slavic:* y	High [close] central unrounded vowel
j	j	*Turkic:* y, *Slavic:* j	Palatal approximant, *in Hungarian its allophone is the* voiced palatal fricative
ʝ	j		Voiced palatal fricative
k	k	k	Voiceless velar plosive
kʰ		kʰ	Aspirated voiceless velar plosive
kʲ		ḱ	Palatalized voiceless velar plosive
l	l	l	Alveolar lateral approximant
ɬ		ʌ	Voiceless dental or alveolar lateral fricative

IPA symbol	Hungarian phonetic symbol	Other phonetic symbols	Name
ʎ	ly		Palatal lateral approximant (*Palatal liquid*)
m	m	m	Bilabial nasal
n	n	n	Alveolar nasal
ŋ	η	η	Velar nasal
ɲ	ny	ń	Palatal nasal
o	o	o	Lower mid [close-mid] back rounded vowel
ɔ		*Slavic:* o	Upper low [open-mid] back rounded vowel
ɔ̃		*Slavic:* ǫ	Nasalized upper low [open-mid] back rounded vowel
oː	ó	ō	Long upper mid [close-mid] back rounded vowel
ø	ö	ö	Lower mid [close-mid] front rounded vowel
øː	ő	ȫ	Long upper mid [close-mid] front rounded vowel
p	p	p	Voiceless bilabial plosive
pʰ			Aspirated p
q		q	Voiceless uvular plosive *(Velar k)*
r	r	r	Alveolar trill
ʃ	s	š	Voiceless postalveolar (palato-alveolar) fricative
ʂ		ṣ	Voiceless retroflex fricative
s	sz	s	Voiceless alveolar (central) fricative
sˤ		sˤ	Emphatic voiceless alveolar fricative *(Emphatic s)*
t	t	t	Voiceless alveolar plosive
tʰ		tʰ	Aspirated voiceless alveolar plosive *(Aspirated t)*
tˤ		tˤ	Emphatic voiceless alveolar plosive *(Emphatic t)*
ʈ		ṭ	Voiceless retroflex plosive
θ	θ	θ	Voiceless dental fricative
c	ty	t́	Voiceless palatal plosive
u	u	u	High [close] back rounded vowel
uː	ú	ū	Long high [close] back rounded vowel
ŭ	ŭ *(in non-Hungarian words)*	*Slavic:* ъ (*in Protoslavic*)	Extra-short [reduced] high [close] back rounded vowel
u̯, w	u̯	u̯	Back [velar] rounded semivowel[930] [glide] *(Voiced rounded labiovelar approximant)*
y	ü	ü	High [close] front rounded vowel
yː	ű	ǖ	Long high [close] front rounded vowel
y̯, ɥ	ü̯	ü̯	Front [palatal] rounded semivowel [glide] *(Voiced rounded palatal approximant)*

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[930] Non-vocalic central approximant (Pullum & Ladusaw 1986, p. 239)

IPA symbol	Hungarian phonetic symbol	Other phonetic symbols	Name
v	v	v	Voiced labiodental fricative
ʋ			Labiodental approximant
z	z	z	Voiced alveolar fricative
ʒ	zs	ž	Voiced postalveolar fricative

Table A-1: Phonetic symbols of each sound

Symbol of category of sounds	Name
ȣ	Undetermined back vowel
ȣ̈	Undetermined front vowel
з	Undetermined vowel

Table A-2: Uralic phonetic symbols of undetermined vowels

Appendix B: Timeline

Date	Event
15th c. BC	Relics of the *Ugaritic* alphabet in the city-state Ugarit (Northwest Syria) with Mesopotamian cuneiform shapes. The writing order was from left to right.
14th c. BC	The earliest relics of the *Proto-Canaanite* (Proto-Sinaitic) alphabet between ancient Mesopotamia (present-day Iraq) and Egypt.[931]
11th c. BC	The estimated beginning of the *Phoenician* alphabet derived from Proto-Canaanite.
10th c. BC	The *Mannaeans* lived in the current territory of Iran.
934 BC	Beginning of the *Neo-Assyrian* Empire that first used the *Akkadian* language with *Neo-Assyrian* cuneiform.
9th c. BC	Beginning of the *Musnad* (ancient South Arabian) alphabet in Yemen, derived from the Proto-Canaanite script.
9th c. BC	The *Moabite* script is attested on the stele of King Mesha of Moab (present-day Jordan.
800 BC	Beginning of the *Greek* alphabet derived from the Phoenician script.
mid-8th c. BC	The Neo-Assyrian Empire started to use the *Aramaic* language and the *Early Aramaic* script alongside the Neo-Assyrian cuneiform.[932]
7th c. BC	Formation of the first *Scythian* tribe confederation north of the Black Sea; see *Image D-1* (in a later period).
7th c. BC	The *Etruscans* in Italy took up the *Western Greek* alphabet.[933]
7th c. BC	The first Lydian and Carian inscriptions in West Asia Minor. This is the estimated beginning of the Lydian and Carian scripts.
676 BC	The allied Scythians and Mannaeans attacked Assyria. The Scythians adopted the Aramaic script.[934]
625 BC	*Cyaxares* united the Iranian-speaking *Median* tribes in the territory of present-day Iran.
616 BC	Fall of the Mannaean Kingdom.
612 BC	The Medians defeated the Scythians.
612 BC	Beginning of the *Neo-Babylonian* Empire (Mesopotamia). The Aramaic language and the Aramaic script remained in everyday use. The version of the Aramaic language called *Chaldean Aramaic* was used in the Neo-Babylonian Empire, as at that time the Chaldean dynasty ruled the Neo-Babylonian Empire.
600 BC	First Old Italian inscriptions.
549 BC	*Cyrus the Great* established the *Achaemenid* (Ancient Persian, Medo-Persian) Empire by defeating Media.
539 BC	The Achaemenid Empire conquered the Neo-Babylonian Empire.
512 BC	Persian King Darius was defeated by the Scythian Army.
500 BC	The estimated beginning of the Lycian script in Asia Minor (Anatolia).

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[931] Abulhab 2009

[932] Hitch 2010, p. 3

[933] Bonfante 1983, pp. 297–311

[934] Györffy & Harmatta 1997, p. 148

Date	Event
first half of the 5th c. BC	The Aramaic language and script were adopted as the official language and script in the Achaemenid Empire. They were further developed and called *Imperial Aramaic* language and script, since they were used in written communication between the different regions of the Achaemenid Empire.[935] The Imperial Aramaic script was *de facto* standardized in the Achaemenid Empire because of its regular and official use.
4th c. BC	The last Carian and Lydian inscriptions in West Asia Minor.
ca. 4th–3rd c. BC	The Aramaic script and its derivations replaced Phoenician, becoming the main scripts of the Fertile Crescent.[936]
350 BC	The King of Scythians began expansion in the region north to the Black Sea.
339 BC	*Philip II of Macedon* defeated the Scythian King *Ateas* (ca. 429 BC–339 BC).
330 BC	Conquest of *Alexander the Great*, fall of the Achaemenid Empire. Greek became the official medium of communication among the nations. Aramaic remained in wide use, but local variants developed separately and became distinct languages in the 3rd century.[937]
330 BC	The estimated end date of the Lycian script in Asia Minor (Anatolia).
312 BC	Beginning of the *Seleucid* Empire, which used the Greek as official language and script.
3rd c. BC	*Sarmatians* (Iranian-speaking *Indo-European* nomads) arrived in Europe and lived north of the Black Sea (*Image D-1*).
3rd c. BC	Existence of the Alan and As people between the Aral Sea (in Middle Asia) and the Don River (in Eastern Europe).[938]
3rd c. BC	*Edessan* script as a derivative of Aramaic alphabet arose around Edessa (present-day Şanlıurfa, Turkey).[939] It was used up to 3rd century AD.
3rd c. BC	Evolvement of the *Hebrew* script derived from Early Aramaic.
3rd c. BC	Foundation of *Petra*, capital of the *Nabataean* Kingdom.
3rd c. BC	The Nabataeans centered around Petra used the *Nabataean* script (as a local development of the Aramaic script) is attested to in territories between Syria and Arabia.[940]
3rd c. BC	A local derivative of the Imperial Aramaic, the *Palmyrene* script arose around Palmyra (present-day Tadmor, Syria).[941]
3rd c. BC	Scythians settled in the Crimean foothills (*Map 3.1-1*).[942]
3rd c. BC	The *Yuezhi* (Yüeh-chih, Rouzhi) people lived in Middle Asia (*Image D-1*). The Yuezhi Empire adopted the Aramaic-based scripting.[943]

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[935] O'Connor 1996, p. 96
[936] Abulhab 2009
[937] Goerwitz 1996, p. 489
[938] Vásáry 2003
[939] Hitch 2010, p. 5
[940] O'Connor 1996, p. 98; Daniels 1996, p. 499
[941] Hitch 2010, p. 10
[942] Aibabin 2008, p. 2
[943] Györffy & Harmatta 1997, p. 148; Harmatta 1997b, p. 173

Date	Event
ca. 250 BC	The first appearance of the *Kharoṣṭhī* script at Shazbazgarhi and Mansehra (present-day North Pakistan).[944] The Kharoṣṭhī script was used primarily in the region of Gandhara (present-day North Pakistan and East Afghanistan). The Kharoṣṭhī script is well-documented in relics from Gandhara as well as Central Asia.[945]
ca. 250 BC	Foundation of the *Greco-Bactrian* Kingdom, where the *Kharoṣṭhī* script was used along with the Greek alphabet.[946]
247 BC	Beginning of the *Parthian* (Arsacid) Empire, in which *Middle Iranian* languages (including the Parthian) were used (*Image D-1*). However, the Imperial Aramaic language remained in use in the western part of the Parthian Empire. A variant of the Imperial Aramaic script, namely *Inscriptional Parthian*, started to be developed and later used in the Parthian Empire.[947]
209 BC	*Maotun*—whose dignitary name was *shanyü*—established the *Hiungnu* (Xiongnu, Hsiung-nu) confederation of nomadic tribes and created an empire north of China. His was the first nomadic empire of the Eurasian Steppe.[948]
2nd c. BC	*Iranian* words gradually began to appear in Aramaic inscriptions, which were used for only the Aramaic language before. This means that the Aramaic script was used to record in the Iranian languages.[949]
174 BC	The Hiungnu defeated the Yuezhi. The majority of the Yuezhi people fled to the *East Tarim Basin* (present-day West China). They were identified as *Tocharians* by J. Harmatta.[950]
129 BC	East of the Aral Sea existed the country *Kangju*, which extended its control over *Sogdiana*. The Iranian-speaking *As* people also lived in Kangju. The influence of the Kharoṣṭhī script was probably strong on their orthography.
128 BC	The Yuezhi (Tocharians) defeated Bactria, and then that area was called Tocharia.[951]
70 BC	The end of the Scythian Kingdom north to the Black Sea.
10 AD	Beginning of the *Kushan* Empire in Central Asia.[952] The Kushans may have been one of the tribes of the Yuezhi speaking Tocharians. Near Kangju, in the north-western part of the Kushan Empire the Kharoṣṭhī script was in use.[953] The Kushans used the dignitary name *jabgu*,[954] which was applied later by several steppean nations, including the Turks, the Khazars, and the Magyars.
30 AD	The *Alans* secured a dominant position over the Sarmatians between the Don River and the Caspian Sea (*Image D-1*).[955] Alans and Sarmatians lived between the lower reaches of the Volga and Don rivers, the Northern and East Azov regions, and the middle reaches of the Kuban River (*Map 3.1-1* and *3.5.1-1*).[956]

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[944] Hultzsch 1925, XXXV
[945] Salomon 1998, p. 47
[946] Harmatta 1999, p. 433
[947] Skjærvø 1996, p. 517
[948] Zimonyi 2007, p. 1
[949] Rogers 1999, p. 257
[950] Harmatta 1998, p. 130
[951] Vásáry 2004, p. 42
[952] Vásáry 2004, p. 42
[953] Harmatta 1999, p. 433
[954] Puri 1999, p. 247
[955] Zadneprovskiy 1999, p. 467
[956] Aibabin 2008, p. 2

Date	Event
mid-1st c. AD	The beginning of the Hiungnu groups' movements west of the Hiungnu Empire.[957]
mid-1st c. AD	A part of Kangju (the As people) moved West from Central Asia and reached Eastern Europe.[958] There, they defeated the Alans and mixed with them.
between 93 AD and 155 AD	The end of the Xiongnu Empire.[959]
2nd c. AD	The Inscriptional Parthian script attained its final form.[960]
ca. 150 AD	The *Ostrogoths* (eastern branch of the Germanic nation *Goth*) reached the Black Sea.
2nd–3rd c. AD	Influence of the Iranian-speaking As–Alans on the Hungarians near the Don River.[961] From that time on As–Alan groups always lived together with the Hungarians.
3rd–4th c.	Connecting graphemes became popular in the Greater Arabian Peninsula and Persia (Iran). Cursive writing necessitated radical changes in the grapheme shapes. Graphemes were mirrored, rotated, extended, or replaced in order to adhere to the cursive rules.[962]
3rd c.	*Germanic* people settled at the lower reaches of the Chorna River (Crimean Peninsula, near Kherson; see *Map 3.5.1-1*) and the southern coast of the Crimean Peninsula.[963]
3rd c.	Partition of the Hiungnu Empire into five local tribes.
around 200 AD	The *Syriac* script is descended from the Edessan script. The Syriac Christians used the Syriac script. The oldest version of the Syriac script is called *Estrangela*.[964]
28th April 224	The local Iranian ruler *Ardashir I* defeated *Artabanus IV* and established the *Sassanid* Empire ruled by the Sassanid Dynasty. The dynasty used the Middle Iranian language and the *Middle Persian* (Inscriptional Pahlavi, Sassanid Pahlavi) script, which gradually replaced the *Parthian* script. Middle Persian remained in official use up to the *Islamic* conquest in 651.
after 242	Both Alans and Sarmatians participated in Gothic raids on the Danubian border-provinces of the *Roman* Empire.[965]
first half of the 3rd c.	Germanic tribes invaded the northern coast of the Black Sea. A group of Alans from the Azov region joined the Germanic tribes, while the rest moved to the Crimea.[966]
273	The Palmyrene Kingdom (present-day Tadmor, Syria) was destroyed by Aurelian.
292	The latest known Parthian inscription at Paikuli (in present-day Iraq).[967]
early 4th c.	The earliest relic of the *Sogdian* script,[968] in use up to the 13th century. The Sogdians were Iranian-speaking people widely known as traveling merchants. Their most significant city was Marakanda (present-day Samarkand in Uzbekistan).

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[957] Vásáry 2004, pp. 10–13
[958] Vásáry 2003
[959] Rogers 2012, p. 222
[960] Skjærvø 1996, p. 517
[961] Vékony 2002, p. 165
[962] Abulhab 2009
[963] Aibabin 2008, p. 2
[964] O'Connor 1996, p. 89, Fig. 4
[965] Aibabin 2008, p. 2
[966] Aibabin 2008, p. 2
[967] Skjærvø 1996, p. 517
[968] Hitch 2010, p. 11

Date	Event
4th c.	Existence of the *Hsien-pei* (Hsien-pi, Xianbei) tribes, nomadic people residing in East Asia.[969]
4th c.	The *Nabataean* language gradually shifted to *Arabic*.
ca. 311 – 385	Bishop *Ulfilas* (Ulphilas, Wulfila), Christian missionary to the Goths, translated the Bible to Gothic using the Gothic alphabet. Due to this, the Gothic alphabet replaced the *Runic* script among the Goths.
ca. 316	Birth of *Saint Martin of Tours* (ca. 316 – ca. 397) in Sabaria (present-day Szombathely in Hungary), who became Bishop of Tours in 370.[970] Later, his birth city played an important role in history.
328	The first known *Jazm* relic. According to Abulhab, the Jazm script was developed from the *Musnad* alphabet of South Arabia with strong influence of the Nabataean script.[971]
330	Beginning of the *Juan-Juan* (Rouran, Ruru, Tan Tan) Empire on the northern borders of China.
ca. 360	The Ostrogoths led by *Ermanarich* established an empire between the Dniester and Don rivers.
370–375	*Huns* (late descendants of the Hiungnu groups who migrated West) defeated the As–Alans in the regions northwest of the Caspian Sea and north of the Caucasus.[972] After their defeat, the As–Alans were torn into three parts. One group moved to the Carpathian Basin (*Map 3.1-1*). The Huns adopted an Aramaic-origin script.[973]
after 370	The Ostrogoths were overthrown by the Huns allied with the As–Alans. From that time on, the Ostrogoths started to migrate to Pannonia and Italy.
375	Fall of the *Kushan* Empire.
381	Ecclesiastical diocese of *Kherson* (Cherson, see *Map 3.5.1-1*) existed and evangelized the population of highland Crimea.[974]
5th c.	Beginning of the *Hungarian–Turkic* interactions.
5th c.	Beginning of the western migration of the *Onogurs* ('Ten Ogurs'), the *Ogurs* (Ugors), and the *Saragurs* ('White Ogurs').[975] Linguistically, the Onogurs belonged to the *Ogur* branch of the Turkic language. They were the first surely Turkic-speaking groups who appeared in East Europe. The Ogurs probably originated from the *Tielö* (Tingling, Tili, Tiele, Kaokü) confederation.[976] Currently, there is only one living Ogur language, *Chuvash*.[977]
ca. 400	The end of the *Proto-Turkic* (Ancient Turkic) linguistic period.[978]
402	The first *Juan-Juan* (Jujan, Rouran) ruler started to use the title *khagan*. This dignitary name was later used by the *Turks* and the *Mongols* as well. Its shortened form, *khan*, has been used up to the present day in several places in Asia.[979]

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[969] Harmatta 1998, p. 129
[970] Tóth 1999, p. 176
[971] Abulhab 2009
[972] Aibabin 2008, p. 2
[973] Györffy & Harmatta 1997, p. 148
[974] Aibabin 2008, p. 3
[975] Zimonyi 2007, p. 1
[976] Vásáry 2003
[977] Róna-Tas 1999a
[978] Róna-Tas 1991a, p. 30
[979] Vásáry 2003

Date	Event
408	The Huns attacked the *Eastern Roman* province of Moesia.
429	The Juan-Juans who lived by the *Chines*e border were defeated by the coalition of the *Chinese* and the *Tielö* nations, and then they escaped westward.[980]
29th Sept. 440 - 10th Nov. 461	Papacy of Saint Leo the Great.
445	Death of the Hunnic ruler *Bleda*; *Attila* became the sole Great King of the Hunnic Empire.
445–453	Reign of the Great King Attila; his capital was in the Carpathian Basin. According to Iranist J. Harmatta, the Great King Attila aimed to unify the whole of Europe, including the Western and Eastern Roman Empires.
20th June 451	The inconclusive *Battle of Catalaunian Plains* (Campus Mauriacus, Battle of Châlons, currently in Southeast France) between the Huns and the Western Romans, including the allied armies on both sides.
452	The campaign of the Great King Attila in Upper (North) Italy ended after the meeting of Pope *Saint Leo the Great* and Attila at Mincio, near Mantua (Italy), near the south shore of Lake Garda.[981]
453	Death of Great King Attila.
460s	*Onogurs* inhabited the region east of the Sea of Azov bordered by the *Savirs* (Sabirs) and As–Alans up to the mid-8th c.[982]
460	The Juan-Juan Khaganate overthrew the remains of the Hiungnu Empire.
466	The Saragurs, encouraged by the Byzantines (*Map 3.1-1*) raided the Persians (Iranians) through the Caucasus.[983]
469	The end of the Hunnic Empire.
480	Appearance of *Turkic Bulgars* (Kutrigurs) on the border of the Eastern Roman Empire at Lower Danube (East of Carpathian Basin).
489	A schism occurred in the *Syriac Christian Church* between the followers of *Jacob of Edessa* and *Nestorius of Persia*. Later, the scripts used by the two branches of the Syriac Christian Church also separated: the western version of the Syriac script used by the *Jacobite* (Western) branch was called *Serto*, and the eastern version was called *Nestorian*.[984]
up to 500	The Juan-Juan adopted the use of written Chinese for official records by 500 AD.[985]
around 500	Ogurs dominated the territories north of the Caucasus and the Steppe.[986]
6th–8th c.	Influx of Ogur loanwords into the Hungarian language.[987]

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[980] Vékony 1992c, p. 438

[981] Bury 1923, pp. 295-296

[982] Zimonyi 2007, p. 6

[983] Zimonyi 2007, p. 5

[984] Daniels 1996, pp. 499–500; Aydin 1997

[985] Rogers 2012, p. 224

[986] Erdélyi 1982, p. 25

[987] Róna-Tas 1999c, p. 271

Date	Event
6th–7th c.	The estimated period of a fragment created by the Nestorian Christians. The script of this fragment is named *Psalter*.[988] It was discovered at Bulayiq near Turpan (Turfan) in East Turkistan (present-day Xinjiang Uigur Autonomous Region, China). The Psalter script is more archaic and contains a greater number of distinct (non-joined) graphemes than the Book Pahlavi script.[989]
6th–7th c.	The existence of the *Penkovka* archaeological culture in the region bordered by the Dniester, the Don rivers in the wooded Steppe.[990] According to Rashev, the Penkovka culture can be attributed to the *Antes* people.[991] The historian Fedorova claimed that the Antes were Finno-Ugric.[992] The Antes lived between the Dnieper and Dniester rivers.[993] According to Vámbéry, the Avars could have pushed them partially into the Carpathian Basin.
6th c.	*Khazars* were subordinates of the Western Turkic Khaganate.
ca. 506	Migration of the Savirs westward.[994]
506–557	Savirs ruled the territory of the North and South Caucasus.[995]
ca. 540	First mention of the Khazars in the *Kârnâmag*.[996]
550s	Western migration of the *Avars* provoked by the western raids of the Turks.[997]
552	The end of the Juan-Juan Khaganate caused by the *Turks* (*Göktürks*). That is the begin of the First Turkic Khaganate. The leaders of the Turks were *Bumin* and his younger brother, *Istemi*.[998] The Turks were a member group of the Juan-Juan confederation, with their ancestral origins in the Altai Mountains.[999]
552	Khagan *Bumin* founded the First Turkic (Göktürk) Khaganate that was *de facto* divided into an eastern and a western part. The ruler of the western part was Khagan *Istemi*. The *Western Turks* were composed of ten tribes; and their khagan had the dignitary name *jabgu*.[1000] The First Turkic Khaganate used the *Sogdian* script.
552–553	The Khazars occupied the important merchant city of Derbent.
555	Syrian geographical description of *Zakharias Rhetor* listed the Khazar people among the nations living north of the Caucasus.[1001]

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[988] Skjærvø 1996, p. 517
[989] Schmitt 1989
[990] Barford 2009, p. 24
[991] Rashev 1992
[992] Федорова 1976, p. 85
[993] Vámbéry 1895, p. 62
[994] Zimonyi 2007, p. 1
[995] Vásáry 2003
[996] Grignaschi 1966
[997] Zimonyi 2007, p. 1
[998] Györffy et al. 1996, p. 23
[999] Rogers 2012, p. 225
[1000] Vásáry 2003
[1001] Róna-Tas 1999a, p. 229

Date	Event
557	In the North Caucasus, Eurasian Avars appeared. The Avars first conquered the *Onogurs*, then the *Barsels*, and finally the *Savirs.*[1002] The Avars were probably identical to a group of the Juan-Juan called *uar* in Chinese sources.[1003] *Theophylactus Simocatta* recorded that the Avars were named *Varchunni.*[1004] The Turks considered the Avars their fugitive slaves, so the Avars were forced to search for new living areas,[1005] rapidly migrating westwards on the northern coastal region of the Black Sea.[1006] The name *Varchunni* of the Avars survived in Hungarian as the frequent family and geographical name *Várkony.*
558	Avar delegates in *Byzantium.*
562–602	Reign of Khagan *Bayan*, ruler of the Avars. The title *khagan* means sovereign ruler in the culture of the Turkic-speaking nomads.
562	Eurasian Avars reached the Lower Danube. The Byzantine fleet prevented them from crossing the Danube.
567	Avars and allied Ogurs moved into the Carpathian Basin (*Map 3.1-1*) when they—with the allied *Langobards*—attacked and defeated the Kingdom of the Gepids. Probably *Kuturgurs* (a kind of Ogur) came with the Avars into the Carpathian Basin.[1007]
568 – first half of 7th c.	The Avars united the areas of the Carpathian Basin and the Steppe north of the Black Sea.
568	The last known Jazm inscription.[1008]
568	The Langobards moved to Italy, and the Avars ruled the whole Carpathian Basin from this time. The Avar Khaganate became one of the most important political and military factors in early medieval Europe.[1009] The seat of the Avar Khagan was probably south of Lake *Pelso* (*Pelissa*, present-day Balaton, Hungary) near present-day Zamárdi Village (*Map 3.4.1-1*).[1010] One of the most important influences of the Avars was the introduction of the iron stirrup, resulting in revolutionary development of cavalry in Europe.[1011]
568	Citizens of *Scrabantia* (present-day Sopron, Hungary) left the city with the Langobards. The city was deserted up to 900; however, its 3.5 meter high walls remained. The city was called in the Avar age Bleak Castle, and in the Carolingian age (9th c.) Öden Burg.
569–570	The Western Turkic Khaganate occupied the territory of the former *Haphtalita* Kingdom from the Sassanid Persian Empire.[1012]
570s	The As–Alans and the Onogurs submitted to the Turks that conquered the territories up to the Crimean Peninsula.[1013]
572–591	Persian–Byzantine war.

[1002] Zimonyi 2007, p. 6
[1003] Vásáry 2003
[1004] Zimonyi 2007, p. 7
[1005] Zimonyi 2007, p. 6
[1006] Róna-Tas 1991a, p. 37
[1007] Vékony 1992c, p. 440
[1008] Abulhad 2009
[1009] Vida 2007, p. 13
[1010] Szentpéteri 1987, pp. 722–726
[1011] Zimonyi 2007, p. 8
[1012] Harmatta 1994, p. 150
[1013] Zimonyi 2007, p. 6

Date	Event
576	The Western Turkic Army occupied Crimean *Bosporos* (present-day Kerch, Ukraine. See *Map 3.1-1*) on the Crimean Peninsula from Byzantium. Their goal was gaining control over the Silk Road on the Steppe.[1014]
576	The Byzantine diplomat *Valentinos* visited the court of the Western Turkic Khagan, *Turxanthos*, who boasted of his triumph over the As–Alans and the Onogurs.[1015]
582–586	The Eurasian Avars destroyed the Lower Danube limes of the *Romaic* (*Byzantine*) Empire.[1016]
ca. 582	The First Turkic Khaganate officially split into the Western and the Eastern Turkic Khaganate. In the Eastern Turkic Khaganate, the Sogdian language and script was used for chancellery purposes and inscriptions.
582	Avars led by Khagan *Bayan* captured *Sirmium* (in Hungarian Szávaszentdemeter, present-day Sremska Mitrovica, Serbia. See *Map 3.4.1-1*) from the Romaic (Byzantine) Empire.[1017]
586	Avars captured *Singidunum* (in Hungarian Nándorfehérvár, present-day Belgrade, Serbia. See *Map 3.4.1-1*).
590	*Duke of Cherson* restored the authority of the Romaic (Byzantine) Empire in the Crimean Bosporos.[1018]
592	Byzantine counterattack on the Avars.
599–600	Raid of *Priscus*. Byzantine troops crossed the Danube (border of the Avar Khaganate).
around 600	The first evidence of the existence of the *Pechenegs* (a Kypchak-type Turkic nation) in a Chinese source. According to this source, the *Pi-ts'ien* people (its reconstructed form: /*bit͡ʃen/) were one of the *T'iehe-lê* tribes north of Samarkand (in Central Asia).[1019]
7th c.	The last relics of the Kharoṣṭhī script near the North Silk Road.[1020]
7th c.	The first appearance of the name *onogundur* or *unogundur* as the name of Bulgars near the *Kuban* River (North Caucasus. See *Map 3.5.1-1*).[1021]
7th c.	The Byzantine craft and trading settlement *Sudak* (Sogdaia. See *Map 3.5.1-1*) was founded on the coast of Southeast Crimea.[1022]
7th c.	Beginning of the Byzantine Christian evangelization in *Patria Onogoria*.[1023]
7th c.	Archaeologist Gy. László claimed that in the 7th century, the majority of the people in the Carpathian Basin spoke Hungarian.[1024]

[1014] Harmatta 1994, p. 150; Aibabib 2008, p. 4
[1015] Zimonyi 2007, p. 6
[1016] Zimonyi 2007, p. 7
[1017] Vásáry 2003
[1018] Aibabib 2008, p. 4
[1019] Harmatta 1998, pp. 129–151
[1020] Glass et al. 2002, p. 4
[1021] Vékony 1981a, p. 71
[1022] Aibabin 2008, p. 5
[1023] Vásáry 2003
[1024] László 1993, pp. 6–7

Date	Event
end of 6th – beginning of the 7th c.	The first written record of the Hungarian language, on the Bow of Környe (Hungary) written in Carpathian Basin Rovash (*Sec. 7.2.1* and *Map 3.4.1-2*). This is the earliest known Carpathian Basin Rovash inscription.
602	The Avar Army commanded by Chief *Apsich*[1025] launched an attack against the Antes, who inhabited the areas of middle Dnieper and Dniester, as the Antes were allied with Byzantium and the Turks. The Avars managed to restore their former sphere of influence north of the Black Sea.[1026]
604–628	Persian–Byzantine war.
611	Persian–Western Turkic war with Turkic victory.
612	The last time the title Anticus (Antes) appears in the Byzantine imperial titulature.[1027]
ca. 623–658	The first *Slavic* state of the *Frankish* merchant *Samo* in the territory of present-day Lower Austria and South Moravia (*Map 3.6.1-1* and *Image D-3*)[1028]
626	The Avar Army allied with the Persian Army besieged *Constantinople*, the Byzantine Capital. The siege was unsuccessful and harmed the prestige of the Avar Khagan.
627 or 630	The Eastern Turkic Khaganate was brought under Chinese supremacy. It is dated to 630 by Györffy et al. and to 627 by Rogers.[1029]
628	*Heraclius,* the Byzantine Emperor, made an alliance with the Western Turks and then their subjects, the Khazars, to cross the Caucasus and attack the Iranians (Persians).[1030]
ca. 630	The Khazars secured their independence from the Western Turkic Khaganate after the Eastern Turks were defeated by the Chinese.[1031] The Khazars unified the Ogur, Savir, and As–Alan tribes.
631–632	Hostilities between the Avars and Kutrigurs (Ogur people) in the Carpathian Basin.[1032] Finally, the Avars consolidated their power. The defeated Kutrigurs had to escape to *Dagobert*, the Frankish King, then to *Walluc*, the Prince of Vends.[1033]
after 631	A new center of the Avar Khaganate is situated between the Danube and Tisa (present-day Tisza) rivers, called Hring or Regia Avarorum in the Frankish sources (*Map 3.4.1-2*).[1034]
632	The Christian *Kuvrat* (Kubrat, Kurt) of the Bulgar Khanate (Great Bulgaria) united the Bulgars between the Dniester and Seversky Donets rivers (*Map 3.1-1*). Its presumed capital was Phanagoria. Three ethnic groups dominated Kuvrat's empire: the Onogundurs, the Bulgars, and the Kutrigurs.[1035]
632	Establishment of the *Rashidun* Caliphate that started to use the *Arabic* script. The Arabic script was developed from the Jazm script.[1036]
633	First Islamic invasion of the Sassanid Persian Empire.

[1025] Curta 2001, p. 105
[1026] Zimonyi 2007, p. 6
[1027] Curta 2001, p. 105; Zhukovsky 2001
[1028] Wallace-Hadrill 1960 (Chronicle of Fredegar)
[1029] Györffy et al. 1996, p. 23; Rogers 2012, p. 226
[1030] Zimonyi 2007, p. 11
[1031] Róna-Tas 1999a, p. 230
[1032] Vékony 2002, p. 212
[1033] Kursch 1888, Fred. IV, 72. MGH SS rer. Mer. II, p. 157
[1034] Szentpéteri 2002, *Map 6*
[1035] Zimonyi 2007, p. 9
[1036] Abulhab 2009

Date	Event
ca. 634	Bulgar Khan *Kuvrat* with his allies defeated the Avars, who lost their eastern territories.[1037]
642	The Rashidun Caliphate started to conquer the whole territory of the Sassanid Empire.
650 or 652	The first Arab–Khazar war.
651	Fall of the Sassanid Empire, in which the Pahlavi script was official.
after 651	The development of the *Book Pahlavi* script that joined graphemes to each other and frequently applied ligatures. This script was generally used up to 900 AD.
652/653	The Khazar ruler started to use the title *khagan*.[1038]
652	Khazars defeated the Arab army near the Khazar capital *Balanjar*.
659	The fall of the Western Turkic Khaganate; it was brought under Chinese supremacy.
661	Beginning of the *Umayyad* Caliphate (descendant of the Rashidun Caliphate).
ca. 665	Death of the Khan Kuvrat; start of the disintegration of the Bulgar Khanate.[1039] The Kutrigurs–Bulgars led by the Khan *Kotrag* (son of the Khan Kuvrat) moved from the Sea of Azov toward the Middle Volga, where Volga Bulgaria was established.
ca. 665–668	Reign of the Bulgar Khan *Bayan* (*Batbayan*, *Bezmer*), the eldest son of Khan Kuvrat. The Ogurs began to migrate to the eastern and central parts of the Crimea.[1040]
between 668 and 679	The Khazars defeated the Bulgar Khanate and extended their supremacy over the Onogur-Bulgars.[1041]
between 670 and 700	Carpathian Basin Rovash inscription on the Silver Vessel of Ozora-Tótipuszta (*Sec. 7.2.2* and *Map 3.4.1-2*) in Ogur.[1042]
670	*Kuber* (Kuver), fourth son of Kuvrat, moved with his people to the Avar Khaganate.[1043] This event has not yet been clarified; the Onogurs probably occupied the Avar Khaganate.[1044] However, Bálint refused this theory.[1045]
679–680	Turkic-Bulgars under the *Chieftain Esperükh* (*Asparukh*, *Isperich*, son of Kuvrat, reign 668–700) moved to the Lower Danube and conquered their homeland (present-day *Bulgaria*).[1046] According to some researchers, the majority of the people of Esperükh (*Proto-Bulgars*, Danubian Bulgars, frequently called *Onogundurs*) were Alan-speaking.[1047] The name 'Esperükh' is a Middle Iranian proper name.[1048] However, the name of the ruler can be independent from the ethnicity of the population.
ca. 680	A geographer from Ravenna recorded *Patria Onogoria* 'Onogur Country' near the Black Sea: "*Item iuxta mare Ponticum ponitur patria quae dicitur Onogoria...*"[1049] It was between the Lower Don and Kuban rivers.

[1037] Róna-Tas 1999a, p. 219; Erdélyi 2004c, p. 169
[1038] Erdélyi 2004a, p. 174
[1039] Erdélyi 2004a, p. 174; Vásáry 2003
[1040] Aibabin 2008, p. 5
[1041] Róna-Tas 1991a, pp. 36–37; Glatz 1989, p. 15
[1042] Vékony 2004a, pp. 195–196
[1043] Vásáry 2003
[1044] Erdélyi 1982, pp. 25–26
[1045] Bálint 2003, pp. 35-65
[1046] Róna-Tas 1999a, p. 219; Vásáry 2005, p. xi
[1047] Rashev 1992, pp. 23–33
[1048] Schmitt 1958, pp. 20–30
[1049] Pinder & Parthey 1860, pp. 170–171

Date	Event
681	Khagan *Elterish* (Ilteris, Kutlig) *Shad* with his governor, *Tonyukuk* restored the independence of the Eastern Turks and founded the Second Turkic Khaganate. Unlike the First Turkic Khaganate, it had no European territories. In the Second Turkic Khaganate, the *Old Turkic* script was officially used.
691	Death of the Khagan Elterish in the Second Turkic Khaganate.[1050]
691–716	Reign of the Khagan *Qapagan Bögü (Mo-cho)* in the Second Turkic Khaganate.[1051]
695	The Khazars seized the whole territory of the Crimea.[1052]
699	Khagan *Qapagan Bögü (Mo-cho)* defeated the Western Turkic tribes.
end of 7th c.	Ecclesiastical diocese of *Kherson* (*Map 3.5.1-1*) existed in Crimea.[1053]
8th–10th c.	About 60 occurrences of the personal names *Ungarus, Hungaer, Hunger, Hungarius, Onger,* and *Wanger* in Western European sources.[1054]
8th c.	The evolvement of the *Old Uyghur* script. It was used in the Uyghur Khaganate between the 8th and 9th centuries and continued to be used by some Uyghur groups in Gansu (in China) until the 17th century.[1055] Its direction is vertical and ordered from left to right.
8th c.	The border between the Avar Khaganate and Duchy of Bavaria (*Image D-3*) was the Ensa River (present-day Enns River. See *Map 3.4.1-2*). The series of Bavarian fortifications along the Enns River was called '*terminus Huni*'. According to *Deer*, the Avar–Bavarian relations were usually peaceful in this century.[1056] Moreover, an Avar–Bavarian alliance existed against the Carolingians.[1057]
8th c.	There was an *Onogur Bishopric* in the Byzantine list of bishoprics.[1058] It was near the Sea of Azov.
after 700	The appearance of the griffin-and-tendril motifs in the Avar art of the Carpathian Basin. This is the beginning of the *Late Avar Age* in Hungarian archaeology.
first decades of the 8th c.	The earliest *Old Turkic* inscriptions.[1059]
700–721	Reign of Khan *Tervel* in the Bulgarian Khanate (Danubian Bulgaria).
710–737	The second Arab–Khazar war.
710s	Khazar–Arab skirmishes in the Caucasus.
710–711	Arabs occupied Derbent, the important Khazarian city.
711	The Byzantine Emperor Justinian II reoccupied Cherson and captured the Khazar *tudun* there.[1060]
713–714	The Arabs occupied Derbent again. Later, the Khazars lost Transcaucasia (*Map 3.5.1-1*) too.

[1050] Györffy et al. 1996, p. 23
[1051] Róna-Tas 1996c, p. 15
[1052] Aibabin 2008: 5
[1053] Aibabin 2008, p. 3
[1054] Király 2006, p. 146; Zoltán 2008, pp 355–358; Kohkheim & Kohkheim 2000 p. 677, *Unger* a.
[1055] Kara 1996, p. 539
[1056] Deer 1965–1967, pp. 719–791
[1057] Bowlus 1978, pp. 3–26
[1058] Moravcsik 1967b, pp 94–95
[1059] Róna-Tas 1996c, p. 12
[1060] Aibabin 2008, p. 5

Date	Event
716–734	Reign of Khagan *Bilge* (Bilgee, 683/684–734) in the Second Turkic Khaganate. He was supported by his younger brother, *Kül Tegin*.[1061]
720-735	In this period, the Old Turkic script was used in the Second Turkic Khaganate.[1062] According to Róna-Tas, the launching the Old Turkic script was related to the establishment of the Second Turkic Khaganate.[1063]
722–723	The Arabs broke through the Khazar defensive lines in the Caucasus and occupied the Khazar capital Balanjar. The Khazars moved their capital near the Etil River (present-day Volga River).[1064]
ca. 723	Occurrence of the name *Ungaria* as a country-name in a source: "*a tyrannide et decimis regis Ungariae liberare*"[1065]
726	Tonyukuk's memorial was erected on the riverside of River Tola, a tributary of the River Orkhon.[1066] The memorial is written in Old Turkic script.
ca. 730	The Khazar Khagan *Bulan* was the first Khazar ruler who converted to Judaism.[1067]
732	Death of Kül Tegin (Tigin) in the Second Turkic Khaganate. After this, his 2,5 m height memorial was erected near the River Orkhon. The memorial is written in Old Turkic and Chinese scripts.[1068]
731 or 736	Occurrence of the personal name *ungar(us)* in sources of Saint Gallen (Switzerland).[1069]
734 or 735	Death of Khagan Bilge in the Second Turkic Khaganate. After this, his 2,5 m height memorial was erected near the River Orkhon. The memorial is written in Old Turkic and Chinese scripts, like Kül Tegin's memorial.[1070]
735-840	In this period, the Old Turkic script was used in the Uygur Khaganate.[1071]
737	The Muslim troops of *Marwan* reached the Khazar capital on the Volga, at which time the Khazar ruler was forced to convert to Islam. The khagan's conversion was for a short period, since later he adopted Judaism.[1072]
744	The last Second Turkic Khagan *Ozmish* was killed by the *Basmils*.
745	The Uyghur–Basmil–Karluk coalition subverted the Second Turkic Khaganate.[1073]
745–747	Reign of *Kutlug Bilge Kül*, the first Uyghur Khagan.
747–759	Reign of the Uyghur Khagan *Bayan-Chor*.
750	Foundation of the *Abbasid* Caliphate after overthrowing the Umayyad Caliphate (which remained in the Iberian peninsula, where it was called *Córdoba* Caliphate).
751	Enthronement of *Pepin* (Pippin) *the Short* as King of all Franks.[1074]
751	The *Talas* Battle, in which the *Arabs*, *Tibetans* and *Karluks* defeated the Chinese.

[1061] Györffy et al. 1996, p. 23; Róna-Tas 1996c, p. 13
[1062] Róna-Tas 1996c, p. 13
[1063] Róna-Tas 1996c, p. 13, 16
[1064] Róna-Tas 1999a, p. 220
[1065] Király 2006, p. 151; Zelliger 2008, p. 370
[1066] Györffy et al. 1996, p. 23
[1067] Róna-Tas 1999a, p. 232
[1068] Györffy et al. 1996, p. 23; Róna-Tas 1996c, p. 13
[1069] Róna-Tas 1996a; Erdélyi 2004a, p. 174; Király 2006
[1070] Györffy et al. 1996, p. 23; Róna-Tas 1996c, p. 13; Rogers 2012, p. 226
[1071] Róna-Tas 1996c, p. 13
[1072] Zimonyi 2007, p. 11
[1073] Vásáry 2003
[1074] Róna-Tas 1999a, p. 56

Date	Event
754	The name of the Khazars in a contemporary record with Old Turkic script is *Qasar* in the *Terh Inscription*, discovered by C. Dorjsüren and published by S. Kljashtornyj.[1075] The same word was written as the name of the Khazars in the *Achik-Tash Inscription* (8th c., *Sec. 8.2.3*) as well.
758	Arab–Khazar war.
761	Occurrence of the name *hungarus*.
766 or 767	*Irishman Saint Virgil* (Vergilius, Virgilius, Fergal, Ferghil, Feirgil Aghaboe, born between 700 and 710, Ireland—784, Salzburg), Benedictine Abbot, Bishop of Salzburg (*Image D-3*), evangelized the neighboring pagan nations, especially in Carinthia (*Map 3.4.1-2* and *Image D-3*). The so-called *Aethicus' Alphabet* was probably recorded by Bishop Saint Virgil, according to Löwe (*Sec. 4.2.6*) and other authors.[1076] Vékony proved that this alphabet contains Carpathian Basin Rovash graphemes from the 8th c.[1077]
767–777	Reign of the Bulgar Khan *Telerig*, who converted to Christianity; however, the conversion of the Bulgars took much longer.
768	Coronation of *Charlemagne*, son of *Pepin the Short*.
after 768	Occurrence of the country-name Ungaria in "*Pipinus dux Francorum ... venit ab Ungaria*".[1078]
773–774	The Franks overthrew the Langobard Kingdom that was in alliance with the Avar Khaganate.
777–803	Reign of Khan *Kardam* of the (Danubian) Bulgarian Khanate.
780s – 790s	*Alcuin of York* (Alkuin, ca. 735–804) was invited by Charlemagne and his task was the creation of the *Carolingian minuscule* in the Court of Charlemagne. The minuscule became the basis of the lower-case Latin graphemes.
785–821	*Arn* (*Arno*, *Aquila*, ca. 750–821) was the Bishop (after 798, Archbishop) of Salzburg.
786–809	Reign of Caliph *Harun al-Rashid* of the Abbasid Caliphate.[1079]
786–787	Confrontation between the local Crimean Christian church authority and the Khazar administration. The Khazars quartered a garrison in the Gothic capital *Doros* (Dori, present-day Mangup Kale, Ukraine) near *Kherson* (present-day Sevastopol, Ukraine). The population of Gothia rose up and expelled them. However, the Khazars defeated the Goths. Thereafter, the Khazars allowed the loyal Onogurs to settle near the Southern Bug River (*Map 3.1-1*).[1080] It is noteworthy that the Southern Bug River is not far from the Carpathian Basin.
787	Charlemagne issued the "*De litteris colendis*", a directive on the study of graphemes.
787	Bavaria ruled by *Tassilo III* became a province of the Frankish Empire.
788	First attack of Charlemagne (742–814) on the Avar Khaganate.[1081]
late 8th c.	The upper and middle leaders and a part of the Khazar population converted to Judaism.

[1075] Kljashtornyj 1983, *passim*.
[1076] Löwe 1952
[1077] Vékony 2004a, p. 232
[1078] Király 2006, p. 152; Zelliger 2008, p. 370
[1079] Róna-Tas 1999a, p. 232
[1080] Aibabin 2008, p. 6
[1081] Stubbs & Hassall 2009, p. 32.

Date	Event
ca. 790s	The Wessobrunn Prayer (Wessobrunn Creation Poem) was written, one of the earliest poetic works in the Old High German language.[1082]
August 791	A smaller Frankish Army led by *Pepin the Hunchback* (son of Charlemagne, ca. 769–811) attacked the Avar Khaganate from Friaul.
20 September 791	Concentrated campaign of Charlemagne and invasion of the Avar Khaganate: they crossed the Avar–Frankish border (*Map 3.6.1-1*). The Avars successfully applied the scorched earth tactic in defense and avoided open battle with Charlemagne's army. Charlemagne reached the Rába River, but then had to withdraw behind the border (the Enns River) due to food shortage.[1083]
795–796	Civil war in the Avar Khaganate between the *khagan* and the *yugurrus* (the ruler and a leading officer in the Avar Khaganate) resulting in both being killed. From that time, the office *yugurrus* was not used any more.
795	Second Frankish campaign against the Avar Khaganate, led by Pepin the Hunchback. *Erich Dux of Friaul*, with the assistance of Slavic *Wonomir*, participated in it as well.[1084] They looted and destroyed the seat *Hring* of the Avar Khagan.[1085]
795	Tudun—an Avar leading officer—went to Charlemagne and declared himself ready for converting to Christianity.[1086]
after 795	The western part of the Carpathian Basin became part of the Frankish Empire, where evangelization began.
between May and August 796	*Bishops' Meeting* near the Danube (*'ad ripam Danubii'*), in which *Saint Paulinus II* (ca. 730/740–802), Patriarch of Aquileia, and Arn Bishop of Salzburg participated, among others.[1087] The meeting was led by Pepin the Hunchback. There is a record about this meeting named *Dictatus Paulini patriarchae*. (The codex containing this record is currently in the Österreichische Nationalbibliothek [Austrian National Library] in Vienna registered under the number 548). The participants in the Bishops' Meeting determined the prayers that must be learned by the catechumens in their native language. Thereafter, the conversion of the population of the western part of the late Avar Khaganate started.
797–809	Occurrence of the name *Hungarius*.[1088]
797	Erich, dux of Friuli, attacked the Avars, and Pepin the Hunchback attacked the Slavs.
798	Arn, Bishop of Salzburg (Arno Salisburgensis, 798–821), gained the title archbishop.
798–866	The Salzburg Archbishopric was active in the region of Charlemagne's conquest from the Avars.[1089]
798	Archbishop Arn made the *Instructio Pastoralis*, containing the fundamentals of the missionary in Pannonia.
798 or 799	The last Khazar campaign against the Arab Transcaucasia (*Map 3.5.1-1*).[1090]

[1082] Steinhoff 1999, pp. 961–965
[1083] Szőke 1999b, p. 75
[1084] Szőke 1999b, p. 76
[1085] Makkay 2005, pp. 107–108
[1086] Vásáry 2003; Szőke 1999b, p. 76
[1087] Veszprémy 2004, p. 53
[1088] Erdélyi 2004a, p. 174
[1089] Wattenbach 1854; Nótári 2000, 93–111
[1090] Róna-Tas 1999a, p. 231

Date	Event
799	Charlemagne organized his eastern territories called *Oriens* (*Marcha Orientalis, Bavarian Eastern March*). The term *Marcha Orientalis* meant Pannonia and Carantania together (‘*limes Pannonicus and Carantanus*’). It was supervised by the *Prefect of the Oriens*; his main task was to defend the border.[1091] The western border of *Orien*s was the former Avar–Bavarian border, the Enns River. The Frankish *Province Pannonia* included the present-day Lower Austria, Burgenland, and the areas of the present-day Hungarian counties Győr–Moson–Sopron, Vas, and Zala (western part of Hungarian Transdanubia).[1092]
799	Synod in Treismauer appointed *Theoderich* Chorepiscopus (*itinerant* bishop) to evangelize the fields of the Carantans and their neighboring fields up to the Drava and Danube rivers. The Salzburg Archbishopric ordained 27 churches in Pannonia up to 867.[1093]
799	In Frankish sources, the Avars were frequently called *Huns*.[1094]
ca. 800	Khagan *Obadiah* strengthened Judaism in the Khazar Khaganate.[1095]
9th c.	Occurrence of a derivation of the ethnic name *Onogur* in the personal name of Bishop of Poznań (present-day Poland): *Uuunnigerus*.[1096] It is noteworthy that in the early medieval Latin orthography, the use of the letters *u* and *v* were not consequently differentiated.
first half of the 9th c.	The Oguz defeated the Pechenegs, who moved to the area of the Emba, Ural, and Volga rivers.
early 9th c.	A group of Turkic-Bulgars moved from the Kuban River to the Middle Volga and Kama rivers, where they founded a new country (*Volga Bulgaria*) with the capital called Bulgar. In Volga Bulgaria there was a tribe called *Suvar* related to the Savirs.[1097] A part of the Volga-Bulgars survived to the present as the *Chuvash* people.
802	Rebellion of the Avars.
802	In the battle at ‘*castellum Guntionis*,’ the Frankish margraves *Cadaloc* and *Goteram* were killed along with several others.[1098] According to historian J. Dénes, the *castellum Guntionis* was near the mouth of the present-day Gyöngyös Brook as it enters the Rába River near the present-day Sárvár City (Hungary). Dénes claimed that the name *Guntionis* originated from the German version *Güns* of the Hungarian name of the Gyöngyös Brook.[1099] It would follow from this theory that, at that time, the local population spoke Hungarian. It is noteworthy that archaeologist E. Tóth refused this localization of ‘*castellum Guntionis*’.[1100]

[1091] Vékony 1986b, pp. 43–44
[1092] Szőke 2000, pp. 336–337
[1093] H. Tóth 2007, p. 26
[1094] Szőke 1999b, p. 78
[1095] Róna-Tas 1999a, p. 232
[1096] Király 2006, p. 156; Zelliger 2008, p. 371
[1097] Vásáry 2003
[1098] *Annales Emmerami Ratisponsis maiores*, MGH SS vol. 1, a. 802, p. 93
[1099] Dénes 1992–1995, pp. 173–177
[1100] Tóth, Endre 2013: *Personal communication*

Date	Event
803	The Avar (probably Onogur) tudun visited Charlemagne in Regensburg and declared his faith.[1101] In sources, his name was '*Zotan*' and he was identified as the Princeps of Pannonia.
805	The Christian *Theodorus Capcan* visited Charlemagne as delegate of the "*Huns*" and asked for a field "*inter Sabariam et Carnuntum*",[1102] since they were not able to stay in their former territories due to the Slavs. Theodorus Capcan was called in some sources the *Prince of the Huns*. According to archaeologist-historian Vékony, the nation of Theodorus was (at least partly) Christian Onogurs[1103] who formerly settled near the Southern Bug River (located east of the Carpathian Basin) in 786–787.
805	Baptism of the "Hun" ruler *Abraham* at the Fischa River (*Map 3.6.1-5*). Abraham was the son of Theodorus Capcan. He asked permission from Charlemagne for using the title *Khagan*.[1104]
around 810	Civil war in the Khazar Khaganate. The Khazar Khagan defeated the rebels; however, three Khazar tribes escaped and joined the neighboring *Magyars*.[1105] The Magyars called them *Khavars*.[1106]
811	Charlemagne made peace in Aachen between *Caniauci princeps Avarorum* [Prince of Avars] and the leaders of the Slavs living near the Danube.[1107]
811	The Franks defeated the Bulgar Khan *Krum*. However, Khan Krum kept areas in the Carpathian Basin.[1108]
812	First occurrence of the name *wangar* in the western part of the Frankish province Pannonia (present-day West Hungary).
814–831	Reign of *Omurtagh*, Khan of Danubian Bulgaria.
817	*Louis* (*Ludwig*) *II the German* (806 – 876) became King of Bavaria.
821–836	*Adalram* (*Adalrammus*) was the Archbishop of Salzburg.
after 821–after 836	*Otto* was the Chorepiscopus of Carantania.
822	Last occasion when the delegate of the Avars (probably Onogurs) visited the Reichstag in Frankfurt.[1109]
827–831	Bulgar Khan *Omurtagh* launched a broad offensive in the Central Danubian region.[1110]
828	The border was stabilized between the Frankish Empire and Bulgaria. From that time, the eastern border of the Carolingian Empire was near the Rába and Marcal rivers and the Rinya Brook (*Image D-3*).[1111] The eastern part of the territory of the former Roman Province Pannonia became an area without state control (*Map 3.6.1-2*).
830-856	*Ratbod* was the *Prefect of Oriens*.

[1101] Szőke 1999b, p. 78

[1102] *Annales regni Francorum*, ad. a. 805. MGH SRG, p. 119

[1103] Vékony 1992c, pp. 448–449

[1104] Szőke 1999b, p. 79

[1105] Bóna 2000; p. 13; Harmatta 2001, pp. 1–14; Takács 2002, p. 532; Erdélyi 2004a; Erdélyi 2008a

[1106] Róna-Tas 1996a, p. 248

[1107] Szőke 1999b, p. 80

[1108] Vékony 1981a, p. 79

[1109] Szőke 1999b, p. 80

[1110] Bóna 2001–2002

[1111] Tóth 1999, p. 177

Date	Event
831	Death of Omurtagh, the last Bulgar khan whose name was Turkic. Presumably, after his death, the Slavic language became dominant in Danubian Bulgaria.[1112]
831–836	Reign of *Malamir*, Khan of Danubian Bulgaria.
832	Peace treaty between the Khan Malamir and East Francia (eastern part of the Frankish Empire).
836–859	*Liupram* (Liuprammus, Liutpram) was the Archbishop of Salzburg.[1113]
836–852	Reign of *Presian*, Khan of Danubian Bulgaria.
after 836–ca. 863	*Osbald* was the Chorepiscopus of Carantania, its seat was probably Mosaburg.[1114]
837–838	The Magyars reached the lower section of the Danube, according to I. Bóna.[1115] This territory up to the mouth of the Don River was called /al-mad͡ʒgarijja/ or /al-mad͡ʒd͡ʒarīja/ in an Arab source.[1116]
838–861	*Priwina* was a vassal of East Francia in the Duchy of Mosaburg *(Map 3.6.1-2)*.[1117] His wife could have been a member of the *Wilhelm* family. Priwina was faithful to the Frankish Emperor and he had very good relations with the Archbishopric of Salzburg. Due to the invitation of Priwina, Danubian Bulgar; South, West, and North Slavic; and especially German settlers arrived in Mosaburg, mixing with the local population.[1118]
838	Khazars built the Sarkel Fortress at the right bank of the Don River with Byzantine contribution (*Map 3.5.1-1*).
840	The latest known Old Turkic inscriptions.[1119]
840	The Kirghiz destroyed the Uyghur capital.[1120]
843	*Louis the German* became King of East Francia based on the Treaty of Verdun in 843.
from 850	*Dominicus* presbyter acted in Mosaburg (southwest of Upper Pannonia, currently near Zalavár, Hungary).[1121]
850	In Mosaburg, the *Saint Mary* Church was ordained by Liupram Archbishop of Salzburg.
852–889	Reign of *Boris I*, Khan (Tsar) of Bulgaria.
859	In Mosaburg, the *Saint Adrian* Church was built by Liupram Archbishop, where Saint Adrian was buried.
859–873	*Adalwin* was the Archbishop of Salzburg.
860	*Saint Cyril* met with the Magyars in the Crimean Peninsula.
861– ca. 876	*Chezil*, son of Priwina was the vassal of East Francia in Mosaburg, .[1122]

[1112] Köpeczi 2001–2002
[1113] Olajos 2001, p. 52
[1114] Szőke 2012, p. 5
[1115] Bóna 1984a
[1116] Bóna 2000, pp. 11–12
[1117] Szőke 1999a, p. 10; H. Tóth 2007, p. 24
[1118] Szőke 1999b, p. 89
[1119] Róna-Tas 1996c, p. 13
[1120] Rogers 2012, p. 226
[1121] H. Tóth 2007, p. 25; Szőke 2012, p. 202
[1122] H. Tóth 2007, p. 32

Date	Event
862	The occurrence of the ethnic name *Ungri* in the *Annales Bertiniani* was written by *Hinkmar* Archbishop of Reims between 862 and 882.[1123] According to F. Makk, the name *Ungri* denoted the Magyars in this case.[1124]
862	*Saint Rastislaw* (846–870), ruler of Moravia, requested missionaries from the Byzantine Empire.[1125]
862	The appearance of the land-acquiring Magyars in the Carpathian Basin.[1126] They were reported by *Hinkmar* in the *Annales Bertiniani*. The Magyar Army helped the rebel *Carloman*, Governor of Ostmark (the eastern border part of the Frankish Empire), against his father, *Louis the German*, King of East Francia. The Magyars were allied with Saint Rastislaw as well.[1127]
863–873	The office of Chorepiscopus of Carantania was not held.
Fall of 863–885	The brothers *Saint Methodius* (ca. 815–885) and *Saint Cyril* (Constantine, ca. 826/7–869), Byzantine missionaries, evangelized in Moravia. Presumably, they were who invented the *Glagolitic* (Glagolitsa) script in order to translate the Bible into Slavic. The accurate date of the creation of the Glagolitic script is indeterminate.
From 864	*Adalwin* Archbishop acted as Chorepiscopus of Carantania.
864	Adalwin, Archbishop of Salzburg, ordained the Church of *Saint Stephen Protomartyr* in Valcum (present-day Fenékpuszta, Hungary).[1128]
864	*Boris*, Tsar (Khan) of Bulgaria, converted to Christianity.
865	Adalwin, Archbishop of Salzburg, ordained the Church of *Saint Michael Archangel* in present-day Veszprém (Hungary).[1129]
867–875	Saints Cyril and Methodius evangelized in the Duchy of Mosaburg during the reign of Chezil.[1130]
867–875	Saint Methodius established the Church of *Saint Clement*; its place is currently in Balatonlelle City, Hungary.[1131]
869	Pope *Adrian II* ordained Saint Methodius to Archbishop of Sirmium (Pannonia).
870	Priests of the Salzburg Archbishopric escaped from the Duchy of Mosaburg thanks to the successful mission of Saint Methodius.
870	An unknown friar wrote the *Conversio bagoariorum et carantanorum* (Conversion of the Bavarians and Carantans) in the orders of *Aldwin*, Archbishop of Salzburg (859–873).[1132]
873	Saint Methodius became the Archbishop of Moravia.
874	*Forchheim* peace treaty between *Louis the German* and *Swentopluk* (around 830–894), the Moravian ruler. Thereafter, Pannonia became again the evangelization area of the Salzburg Archbishopric up to the *Magyars' Land Acquisition*;[1133] and the missionary of Saint Methodius was restricted to Moravia.

[1123] Annales Bertiniani
[1124] Makk 1998
[1125] McDaniel 2004, p. 31
[1126] Györffy 1987, p. 566
[1127] Róna-Tas 1998a
[1128] H. Tóth 2007, pp. 25–26
[1129] H. Tóth 2007, pp. 25–26
[1130] Goldberg 2006, p. 319
[1131] H. Tóth 2007, p. 27
[1132] Nótáry 2000, pp. 93–111
[1133] Szőke, Béla Miklós 1999, pp. 10–12; Goldberg 2006, p. 325

Date	Event
876	*Louis the Younger* (835–882), *Carloman* (830 – 880) and *Charles the Fat* each became King of East Francia. From 876 to 882, Louis the Younger ruled East Francia.
881	The Magyars, joined by the Khavars and Swentopluk, the Moravian ruler, fought together against the East Francia Army near *Vindobona* (present-day Vienna, Austria) and *Culmite* (possibly present-day Kulmberg or Kollmitz, Austria). In a contemporary source: "*Primum bellum cum Ungaris ad Weniam Secundum bellum cum Cowaris ad Culmite.*"[1134]
882	*Charles the Fat* (839–888) became King of East Francia.
after 883	The territory *"Avarorum Solitudo"* was called *"Pannoniorum Solitudo"* (Plains of Pannons) in the Frankish sources.[1135]
884	The Moravians crossed the Danube and destroyed the territory east of the Raba River (Rapa, Hraba, present-day Rába in Hungary). In the *Annales Fuldenses*: "*Pannonia de Hraba flumine ad orientem tota deleta est.*"[1136]
885	Exile of the disciples of Saints Cyril and Methodius from Moravia after Saint Methodius's death. Some of them fled to Bulgaria, where they established theological schools. One of them, *Saint Clement of Ohrid*, devised the Cyrillic alphabet based on the Greek and the Glagolitic alphabets.
886–912	Reign of *Leo the Wise*, Byzantine Emperor.
886	*Wiching*, Bishop of Nitra, banned the Glagolitic script. The seat of the bishop in the 9th century differs from the present-day Nitra (currently in Slovakia).[1137]
after 886	Some disciples of Saints Cyril and Methodius went to Croatia, where they continued the use of the Glagolitic script and developed its squared variant.
887–924	*Berengar I* was the King of Italy.
Nov. 887	*Arnulf of Carinthia* (887–899) became King of East Francia.
889–893	Reign of *Vladimir-Rasate*, ruler of Bulgaria.
890 or 892	Arnulf of Carinthia invited the *Magyars* /mɒɟɒrs/ to defeat Swentopluk, the Moravian Prince.[1138]
893–927	Reign of the Bulgar Tsar *Simeon I the Great.*
894–896	Bulgar–Byzantine war.
ca. 894.	Beginning of the Magyars' Land Acquisition led by the *Grand Prince Árpád* (ca. 845–ca. 907). The accurate date of the beginning of the Land Acquisition is indeterminate.
894	Magyar–Byzantine alliance against the Bulgars.
895–900	The Magyars of Árpád occupied the eastern part of the Carpathian Basin (*Map 3.6.1-2* and *3.6.1-5*) taken from the Bulgars.
899	Campaign of the Magyars against King *Berengar I* in alliance with the Roman Emperor Arnulf.

[1134] Ann. Iuv. Max. ad a. 881 MGH SS XXX/2. p. 742.

[1135] Szentpéteri 1995

[1136] Annales Fuldenses, MGH SRG, p. 113

[1137] Szőke 2012, p. 255

[1138] Stubbs & Hassall 2009, p. 69.

Date	Event
8th December 899	Death of the Roman Emperor Arnulf, ally of the Magyars. Probably thereafter, the Magyars occupied the whole of Frankish Pannonia. However, T. Hölbling, K. Szabó (1824–1890) and F. Salamon (1825–1892) claimed that the western border of the Magyar Empire was the Enns River even before 899.[1139]The Magyars finally annihilated the Frankish rule in Pannonia (original source in the *Fulda Chronicle*: "*Avari, qui dicuntur Ungari ... totam Pannoniam usque ad internetionem deleverunt*").[1140] From that time, the Magyar (Hungarian) – Frankish border was the Enns River.
beg. 10th c.	In the legend of *Saint Ivan the Hermit,* the Saint said, "*Certe de terra Ungaria huc veni, quia sum natione Ungarus"* (I came from Hungary, my nationality is Hungarian).[1141]
10th–12th c.	Hungarians lived in the current territory of *Szekelyland* (part of Transylvania that was at that time East Hungary, currently in Romania).[1142]
10th c.	The Sogdian script generally went out of use; however, it remained in use to a certain extent until the 13th century.
10th c.	There is data in sources that Szekely archers lived in Moson County (medieval Hungary), east of the Leitha River.[1143] Note that the name *Moson* survived as a family name among the Szekelys from the end of the 12th century.
10th c.	Pechenegs settled down in different places in Hungary, most of them on the border.
around 900	The date of the earliest known Szekely-Hungarian Rovash relic in *Bodrog* (Pannonia, present-day Transdanubia, Hungary; *Map 3.6.1-5*).
900–904	Magyar–Bavarian wars for the control over Moravia.[1144]
900–902	The Magyars sent delegates to *Louis IV the Child,* King of East Francia, in order to elaborate a peace agreement, but the offer was rejected.
900	*Theotmar*, the Archbishop of Salzburg, wrote to the Pope in his letter that the Moravians joined the Magyars.
900	The Magyars took possession of the deserted castle of Scrabantia. Later (from the 10th to the beg. 11th centuries) Comes *Supron* built a new fortress based on the old city walls. His name became the current name of the city as Sopron (Hungary).[1145]
4 Feb. 900	*Louis IV the Child* became the King of East Francia.
Summer 904	Delegate *Kurszán* (Khussal, Chussol), Magyar leader, and his entourage received an invitation from Louis the Child for negotiating, but all of the Magyar delegates were murdered near the Fischa River.[1146] Some scholars claim that Kurszán's title was probably *Gyula*[1147] (its contemporary name: /d͡ʒla/) and the *Gyula* was the leader of the Khavars.[1148] The name *Gyula* probably originated from the Kypchak /d͡ʒla/[1149] or the Khazar /ðla/ or /ʝla/.[1150]

[1139] Hölbling 2009, p. 123
[1140] Annales Fuldenses, MGH SRG: 125
[1141] Király 2006, pp. 196–197; Zelliger 2008, p. 371
[1142] Botár 2008, p. 77
[1143] Györffy 1998, p. 138
[1144] Hölbling 2009, p. 125
[1145] Gömöri 2002, *passim.*
[1146] Györffy 1998, p. 135
[1147] Pauler 1900, p. 31; Kristó 1980, pp. 220–226
[1148] MacArtney 1930, p. 116
[1149] Czeglédy 1960, pp. 124–125
[1150] Vékony 2004a, pp. 229–230

Date	Event
907–937	Reign of *Arnulf*, Duke of Bavaria.
907	In a Latin source made in the court of East Francia, the Hungarians were named as *Ugros*. Moreover—according to a Byzantine record—in Byzantium it was known that the Latin Christians referred to the '*Pannons*' as '*Ugros*'.[1151]
4th–5th July 907	Battle of *Brezalauspurc* with the victory of the Magyars over the army of East Francia. Szőke proved that *Brezalauspurc* was identical to Mosaburg, the seat of the Frankish Pannonia.[1152] There, the Magyars defeated the army of *Dietmar*, the Archbishop of Salzburg, and *Liutpold*, the Prince of Bavaria (Prefect of Oriens).[1153]
August 907	The border between East Francia and the Magyars became the Enns River, and it was again called *terminus Huni*.[1154]
910	First Battle of *Augsburg*, wherein the Magyars defeated Louis the Child's army.
913–959	Reign of *Constantine Porphyrogenitus* 'Born in Purple' (905 – 959), Byzantine Emperor.
914	Peace negotiation between *Arnulf*, the Duke of Bavaria, and the Magyars, in which Arnulf accepted the Enns River as the border between Hungary and Bavaria.[1155]
922	*Chronicle of the Popes* referred to the Magyars under the name *Ungri* (13th century copy) in relation with the Italian campaign of the Magyars.[1156]
after 922	Volga Bulgaria converted to Islam.
943– ca. 957	Romaic (Byzantine) Empire paid annual taxes to the Magyars.[1157]
950/951	*Henry I* (Henrik), Duke of Bavaria (919/921–955), attacked West Hungary.[1158]
ca. 955– ca. 972	Reign of *Taksony*, the Grand Prince of Hungary.
10th Aug. 955	Second Battle of Augsburg (Battle of Lechfeld). The West Transdanubian Army of Hungary with an Army of the Khavars led by *Lél* (Lehel) lost the battle against the joint army of Bavarian, Frankish, Saxon, and Bohemian troops and the troops of *Conrad the Red* (922–955), Duke of Lorraine. The Magyar commander-in-chief was *Bulcsú*.
965	The Kievan Rus' Prince *Sviatoslav I* defeated the Khazar Khaganate and destroyed its most important cities.
972–997	Reign of *Géza*, the Grand Prince of Hungary (born in 949).
973	*Henry II the Wrangler* (the Quarrelsome, Heinrich der Zänker, 951–995) attacked West Hungary.
973	Twelve Magyar nobles representing the Grand Prince Géza participated in the Imperial Convention in Quedlinburg (present-day Saxony-Anhalt, Germany) during the time of the Holy Roman Emperor Otto I The Great (912–973). The Grand Prince Géza had to cede the territory between the Enns and Traisen rivers, later to the Vienna Woods in a negotiation with the Emperor Otto I.[1159]

[1151] Györffy 1975, pp. 1788–1792.
[1152] Szőke 2012: 6
[1153] Szabados 2007
[1154] Bowlus 1978, pp. 3–26
[1155] Györffy 1998, p. 135
[1156] Róna-Tas 1999a, p. 53
[1157] Glatz 1989, p. 20; Hölbling 2009, p. 77
[1158] Györffy 1998, p. 135
[1159] Györffy 1998, p. 136

Date	Event
973	About 500 people in the court of the Grand Prince Géza were baptized by Friar *Bruno* from Saint Gallen (Switzerland).[1160] This started a large-scale Christian evangelization in Hungary.
976	The Holy Roman Emperor *Otto II* created the Marcha Orientalis as a part of Bavaria between the Enns River and Wienerwald. It later became the March of Austria.
991	Since *Henry II*'s time, the Leitha River became the new border between Hungary and Bavaria. The border was stable for one thousand years.[1161]
ca. 992	*Leon Diakonus* referred to the Magyars by the name of Huns and Scythians (12th century copy).[1162]
997	The Grand Prince Géza founded the first Hungarian Benedictine monastery, the Abbey of Pannonhalma (Southeast of the city Győr).[1163]
997	*Saint Stephen* (former name: *Vajk*) *I* became the Grand Prince of Hungary (born in ca. 970).
ca. 1000	Chieftain *Ajtony* (in sources Ahtum, Achtum), clan leader (lived: 955 – ca. 1008 or later) created a tribal state near the Maros River (Moresis) with the seat in Marosvár (later named Csanád, present-day Cenad, Romania. See *Map 3.6.1-5*).
Christmas Day 1000	Coronation of the Grand Prince Saint Stephen I as the King of Hungary (alternative date: 1st January 1001).
1000/1007 – 2nd Sept. 1031	Life of the Prince *Saint Emeric of Hungary* (Imre, also known as Americus, Amerigo, Aimeric, Hemericius, Henricus), son of King Saint Stephen I.
1002	Chieftain *Ajtony* was baptized in Vidin (city near the Danube in Northwest Bulgaria) according to the Byzantine rite. Byzantium continuously supported his power. Later Ajtony accepted the supremacy of the Byzantine Emperor *Vasilios* (Basil) *II* (reign 976–1025) and the Greek-Orthodox missionaries.
1008	The Royal Army of Saint Stephen I, King of Hungary, led by Chief *Csanád* defeated Ajtony in the Battle of Nagyősz (present-day Tomnatic, Romania. See *Image D-4*) and then restored the sovereignty of the Hungarian central power in the former area of Ajtony. From this time on, the name of *Marosvár* (seat of Ajtony) changed to *Csanádvár*. Saint Stephen I established the Bishopric of Csanád. Note that the date of the Battle of Nagyősz is indeterminate; there are different theories that it took place in 1014, 1015 or 1028.
ca. 1018	The creation of the founding charter of the Veszprémvölgy (Hungary) Nunnery in Greek; it survived in its renewal document from 1109.
1018	Byzantine Emperor *Basileios II Boulgarokronos* ('Killer of the Bulgars') crushed Bulgaria and incorporated it into the Romaic (Byzantine) Empire.[1164]
1030	The Holy Roman Emperor *Conrad II* (ca. 990–1039) attacked Hungary, but King Saint Stephen I defeated him.
1031	Saint Stephen I and Conrad II made peace and, based on it, the territories between the rivers Fischa and Leitha (in Hungarian Sár or Lajta) became part of Hungary.
1031	Death of Saint Stephen I, first King of Hungary.

[1160] Glatz 1989, p. 26

[1161] Györffy 1998, p. 136

[1162] Róna-Tas 1999a, p. 53

[1163] Györffy 1987, p. 568

[1164] Vásáry 2005, p. xi

Date	Event
1071/1072	Hungary captured Sirmium (Szávaszentdemeter, present-day Sremska Mitrovica in Serbia; see *Map 3.4.1-1*) from the Romaic (Byzantine) Empire.[1165]
1077–1095	Reign of the King *Saint Ladislaus I of Hungary* (László, in medieval English: Saint Lancelot[1166]).
20th May 1092	Synod of the Hungarian prelates in the Fortress of Szabolcs (Hungary).[1167]
1095–1116	Reign of King *Coloman I the Book-lover* (Könyves Kálmán) of Hungary.
11th–12th c.	The date of the Pottery of Bilyar (*Sec. 5.2.7*). Bilyar (present-day Bilyarsk in Tatarstan, Russia; see *Map 3.5.1-1*) was intermittently the capital of Volga Bulgaria near Bulgar and Nur-Suvar cities between the 8th century and 1238.
12th c.	The border-guard Szekelys from West Hungary migrated to *Transylvania*.[1168]
1109	Renewal of the founding charter of the *Veszprémvölgy* (Hungary) Nunnery in Greek and its Latin translation.
1116–1131	Reign of *King Stephen II* (István) of Hungary.[1169]
second half of the 12th century	The date of the earliest known Szekely-Hungarian Rovash relics in Szekelyland.
1176/1177 –1235	Reign of *King Andrew II* (András) of Hungary.
1223	Mongol attacks on Volga Bulgaria.
1235–1270	Reign of *King Béla IV* of Hungary.
May 1235– 27th December 1236	The Hungarian Dominican Friar *Julian* made an expedition on behalf of the Hungarian king to find the Hungarians remaining in their eastern homeland. He reached them at the Kama River (east of the Volga River).[1170]. He called their territory Magna Hungaria (Great Hungary).
1236	Mongol Khan *Batu* defeated Volga Bulgaria.[1171]
1237	In the second journey of Friar Julian, he was not able to reach Great Hungary, since the Mongol Tartars had devastated it.
1240s	Establishment of the Golden Horde, the Volga Bulgarians mixed with the Tatars.
23rd February 1443 – 6th April 1490	Reign of *Matthias I*, King of Hungary (*Map 9.2.5-1*). During his renaissance period of reign, the Szekely-Hungarian Rovash aroused the Hungarian intellectuals' interest.
1248	Pope *Innocent IV* gave the Croats of South Dalmatia the privilege of using their own language and the Glagolitic script in the liturgy. The Glagolitic script remains in use to the present.
second half of the 15th c.	The date of the Alphabet of *Nikolsburg* (*Fig. 9.2.5-2*), the first Szekely-Hungarian Rovash alphabet.

[1165] H. Tóth 1999, pp. 821–826

[1166] Religion Word, website, article *Saint Ladislaus*

[1167] Péterffy 1741–42, Vol. I, p. 14

[1168] Rácz 2003, p. 2

[1169] Kristó 1994

[1170] Erdélyi 1998, pp. 45–49.

[1171] Vásáry 2005, p. 64

Date	Event
1490–1516	Reign of King *Vladislas II* of Hungary.
1512–1520	Reign of Sultan *Selim I* of the Ottoman Empire (Turkey).
1515	The date of the Constantinople Rovash Inscription (*Fig. 9.2.7-4a*).
1516–1526	Reign of King *Louis II* of Hungary.
1598	The first rovash textbook, called *Rudimenta* written by Ioannis Thelegdi.
1718	Book of Mátyás Bél, the first printed book about the Szekely-Hungarian Rovash script.

Appendix C: Periodization of the Hungarian language and Latin-based orthography

The linguistic periods of the Hungarian language is listed in *Table C-1*.

Name	Time period
Pre-Hungarian linguistic period	5th–1st millennium BC
Ancient Hungarian linguistic period	1st millennium BC – 896 AD
Old Hungarian linguistic period	896 – 1526
Middle Hungarian linguistic period	1526 – 1772
New Hungarian linguistic period	1772 – 1920
Current Hungarian linguistic period	1920 – present

Table C-1: The ages of the history of the Hungarian language[1172]

The periodization of the Latin-based Hungarian orthography worked out by linguist I. Kniezsa, and the related terms are presented in *Table C-2*.[1173] The Old Hungarian orthography had several special graphemes.[1174]

Main ages of the Latin-based Hungarian orthography	Time period	General naming	Naming without periodization
Age of the Medieval Systems (up to the appearance of the printing press in Hungary). One of them is the **Chancellery Orthography**, another is the **Cloister Orthography**[1175]	**1st Period**: from the 11th c. to 1109 (*App. B*)	**Old Hungarian orthography**	Latin-based Hungarian orthography
	2nd Period: 12th c.		
	3rd Period: From 1177 (start of the reign of King Andrew II of Hungary) to the end of the 13th c.		
	4th Period: from the 14th c. to the 1530s		
Age of the Modern System (up to the publication of the first Hungarian spelling rules)	From the 1530s to 1832		
Age of the Contemporary System	From 1832 to present	**Hungarian orthography**	

Table C-2: Periodization of the Latin-based Hungarian orthography

The consonants can be classified by considering various features. The most important ones are listed in *Table C-3* and some of their cases are presented.

[1172] Szathmári 1996, pp. 26–39; Kiss 2003, p. 17

[1173] Kniezsa 1952, pp. 5–60; 1959, pp. 4–5

[1174] Hosszú & Krauth 2009, p. 2

[1175] Kniezsa 1959, p. 5; Zelliger, Erzsébet 2010–2011: *Personal communication*

Feature	Cases
Place of articulation	• **Bilabial**: articulated with both lips, e.g. /m/ • **Labiodental**: articulated with the lower lip and the upper teeth, e.g. /f/, /v/ • **Dental**: articulated with the tongue against the upper teeth, e.g. /θ/ • **Alveolar**: articulated with the tongue against or close to the superior alveolar ridge, e.g. /z/ • **Postalveolar**: articulated with the tongue near or touching the back of the alveolar ridge, e.g. /ʃ/, /ʒ/, /d͡ʒ/ • **Palatalized**: it is pronounced with a palatal secondary articulation, e.g. /d͡ʒʲ/ • **Palatal**: articulated with the body of the tongue raised against the hard palate, e.g. /c/, /ɟ/, /j/ • **Velar**: articulated with the back part of the tongue (the dorsum) against the soft palate, the back part of the roof of the mouth, known also as the velum, e.g. /k/, /ɣ/ • **Uvular**: articulated with the back of the tongue against or near the uvula, e.g. /q/ • **Laryngeal (glottal)**: articulated with the glottis, e.g. /h/
Manner of articulation	• **Plosive**: articulated by stopping the airflow in the vocal track (out of the mouth) and the airflow is released outwards through the mouth, e.g. /p/ • **Nasal**: articulated with a lowered velum in the mouth, allowing air to escape freely through the nose, e.g. /n/ • **Fricative**: articulated by forcing air through a narrow channel made by placing two articulators close together, e.g. /j/, /s/ • **Affricate**: begin as plosives but release as a fricative, e.g. /t͡s/, /t͡ʃ/ • **Approximant**: fall between fricatives (producing a turbulent airstream) and vowels (producing no turbulence), e.g. /u̯/ • **Liquid**: articulated without friction, e.g. /l/, /r/
Phonation	• **Voiced**: vocal cords vibrate, e.g. /v/ • **Voiceless**: vocal cords do not vibrate, e.g. /f/
Use of tongue in articulation	• **Central**: air flows across the center of the mouth over the tongue, e.g. /z/ • **Lateral**: air flows along the sides of the tongue, e.g. /l/ • **None**: the sound is not produced with airflow over the tongue, e.g. /m/

Table C-3: Features of the articulation of the consonants (simplified description)

Appendix E: The complete list of the attested rovash graphemes

Proto –Rovash	Y FORKED A, X B, ⋟ ANGLED B, ᛘ RAISED B, ₦ CS, ∩ ARCHED D, > SHARP D, ∋ DIAGONAL E, ⅂ FORKED E, Φ CENTRAL F, N GH, ⎍ ANGLED CH, ∩ ARCHED CH, 1 ANGLED I, ↄ ARCHED I, ꟻ CIRCLE ENDED I, D CLOSED J, ß ARCHED K, ⟩ SIMPLE L, } OPEN M, O ROUND M, Ͻ N, ᛃ FORKED N, ᛊ, ⦄ FORKED O, ◊ CLOSED Q, H R, Ω ARCHED R, h SHARP R, ⊿ CIRCLE ENDED SH, Ɏ ZS, Ỷ SHL, T FORKED SZ, Ⴟ CENTRAL T, ◊ CLOSED T, Ẋ OPEN T, X SHARP T, ⅃ OPEN V
Early Steppean Rovash	X B, > SHARP D, ◊ CLOSED G, H GH, ⁞ TRIPLE GH, Г ANGLED I, ⊿ CIRCLE ENDED I, D CLOSED J, Ⲗ CROSSED L, ſ SHARP L, } OPEN M, Ͻ N, ⅂ SIMPLE P, Ⴟ ANGLED Q, □ CLOSED R, I SZ, T FORKED SZ, ϭ ARCHED T, ⅄ FORKED T, ✢ SHARP T, N ANGLED UE
Carpathian Basin Rovash	Y FORKED A, X B, ⌑ CS, > SHARP D, ⅂ T, ∋ DIAGONAL E, ⅂ FORKED E, ⅄ FORKED G, ⟋ SIMPLE G, N GH, ⩚ SHARP H, ⅄ SHARP CH, ↄ ARCHED I, Г ANGLED I, ꟻ CIRCLE ENDED I, D CLOSED J, ᛀ OPEN K, Å SHARP K, ß ARCHED K, ⅄ FORKED L, ⟩ SIMPLE L, Ø LY, } OPEN M, Ͻ N, ⅄ NG, ↄ SHARP N, ⦄ OPEN O, Ѫ TRIPLE O, ⅃ FORKED P, ⅂ SIMPLE P, 8 ARCHED Q, □ CLOSED R, Φ CLOSED S, I SZ, ◊ CLOSED T, Ẋ OPEN T, Ѫ SHARP U, ⅁ ARCHED UE, ⅃ OPEN V, ⅃ OPEN Z

Steppean Rovash	FORKED A, ANGLED B, ARCHED B, RAISED B, CS, ARCHED D, SHARP D, TRIPLE E, ANGLED E, ARCHED E, CLOSED E, CLOSED G, GH, FORKED CH, SHARP CH, ANGLED I, ARCHED I, CIRCLE ENDED I, CLOSED J, FORKED K, ARCHED L, SIMPLE L, LT, OPEN M, N, ANGLED N, FORKED N, NG, , FORKED O, FORKED P, SIMPLE P, ANGLED Q, ARCHED Q, CLOSED Q, OPEN Q, SHARP R, ARCHED R, CLOSED R, ARCHED SH, ZS, SZ, FORKED SZ, ARCHED T, FORKED T, , OPEN T, SHARP T, ARCHED UE, SHARP UE, OPEN V
Szekely-Hungarian Rovash	A, AA, B, C, CS, D, DZ, DZS, E, CLOSED E, EE, F, DIAGONAL F, G, GH, GY, H, CH, I, II, J, K, OPEN K, SHARP K, L, LY, M, N, NY, O, CIRCLE ENDED O, OO, OE, OPEN OE, OEE, P, Q, R, SIMPLE R, S, SCH, SZ, T, FORKED TY, SHARP TY, TRIPLE TY, U, UU, CLOSED OE-UE, OPEN UE, OPEN UEE, V, OPEN V, W, X, Y, Z, ZS, AMB, AND, ANT, EMP, ENC, ENT, MB, NAP, TPRU, TPRUS, NB, UNK, US
Rovash numerals	ONE, TWO, THREE, FOUR, FIVE, TEN, FIFTY, ONE HUNDRED, FIVE HUNDRED, ONE THOUSAND

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Appendix D: Color Images

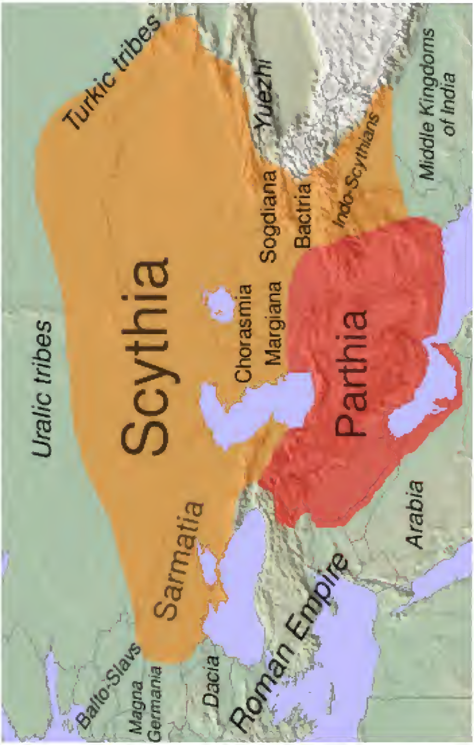

Image D-1: The extension of Sarmatia, Scythia and Parthia in the 1st century BC with the current borders[1176]

[1176] Wikimedia Commons, website, *http://commons.wikimedia.org/wiki/File:Scythia-Parthia_100_BC.png*

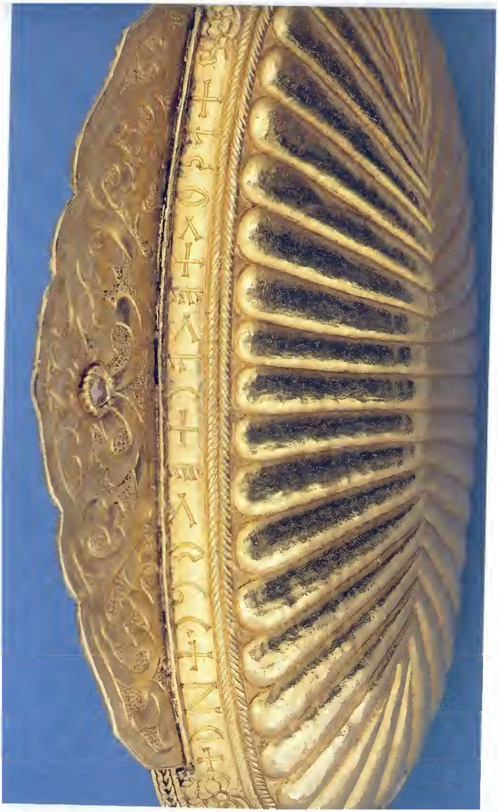

Image D-2: The bowl No. 8 in the Treasure of Nagyszentmiklós with a Carpathian Basin Rovash inscription[1177]

[1177] Kovács 2002, p. 26

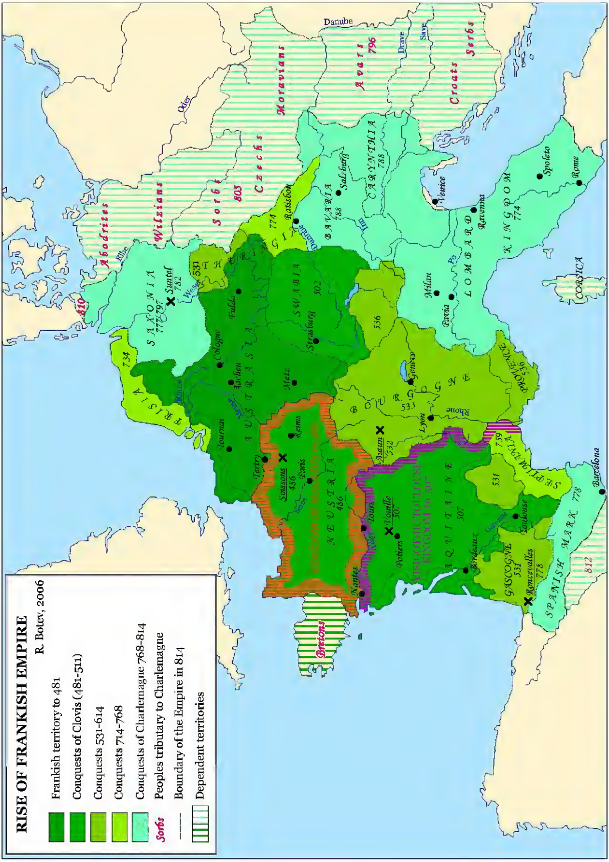

Image D-3: The Frankish Empire up to 814[1178]

[1178] Wikimedia Commons, website, *http://upload.wikimedia.org/wikipedia/commons/0/00/Frankish_empire.jpg*

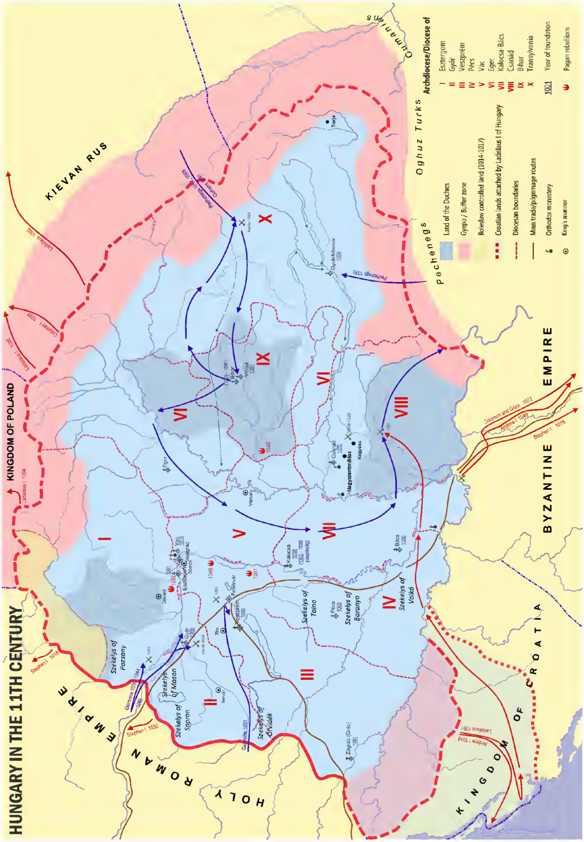

Image D-4: Kingdom of Hungary in the 11th century with places where Carpathian Basin Rovash relics were found[1179]

[1179] Wikimedia Commons, website, *http://upload.wikimedia.org/wikipedia/commons/d/d4/Hungary_11th_cent.png*, modified, cf. Történeti Világatlasz 1991: 109

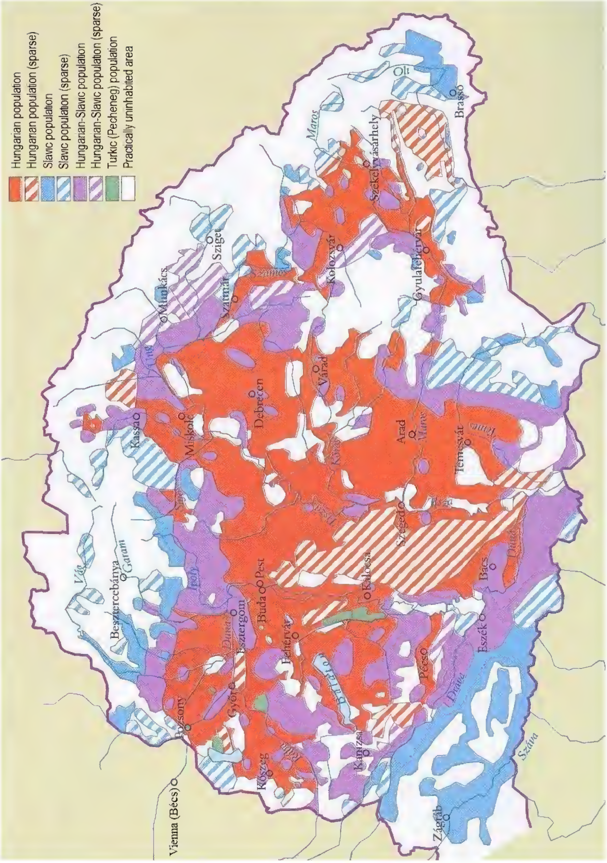

Image D-5: Geographical distribution of languages in the Hungarian Kingdom in the 11th c.[1180]

[1180] Kniezsa 1938, pp. 368–472

Words from the publisher

The book “Heritage of Scribes” introduces the family of the Rovash scripts, which is the cultural heritage of the Eurasian nations who lived in the Steppe and currently live in the Carpathian Basin. This book presents the significant relics of these Rovash scripts, namely, the Proto-Rovash, the Early Steppean Rovash, the Carpathian Basin Rovash, the Steppean Rovash and the Szekely-Hungarian Rovash. Moreover, it presents a comprehensive genealogy of these and related scripts and introduces a novel analytical method based on the parallel topological, phonemic, geographical, and historical similarities of each glyph in the examined scripts.

The majority of the Rovash scripts became extinct in the Medieval Times, but the Szekely-Hungarian Rovash has been continuously remained in use up to today and has been adapted to the evolving Hungarian language. Besides the traditional utilization areas (personal use, mailing, decoration, accounting, etc.) currently, the Szekely-Hungarian Rovash is also used in the mass media, publishing and education in Hungary, and in every other country of the world, where Hungarian communities exist.

The Rovash scripts are part of the Hungarians’ and the whole humanity’s intellectual heritage. The worldwide user community of the Szekely-Hungarian Rovash reached the hundred thousand scale and continues to grow yearly. Although the Szekely-Hungarian Rovash is a popular writing system of the Hungarians, there are still debated questions about its genealogy, development, and history. However, with the quantity of facts, the accuracy of research and new discoveries, the “Heritage of Scribes”—the first comprehensive scientific work in this field since several decades—will definitely inspire further research in paleography and linguistics.

Inevitably, the “Heritage of Scribes” is a great scientific leap forward but hopefully not the last. The publisher wishes that the book will induce both further research about the genealogy of the scripts and at the same time technical, practical developments in the contemporary rovash usage.

László Sípos

chairman, Rovas Foundation

The Heritage of Scribes introduces the history and development of five members of the Rovash (pronounced "rove-ash", other spelling: Rovas) script-family: the **Proto-Rovash**, the **Early Steppean Rovash**, the **Carpathian Basin Rovash**, the **Steppean Rovash**, and the **Szekely-Hungarian Rovash**.

The historical and linguistic statements in the book are based on the published theories and statements of acknowledged scholars, historians, archaeologists, and linguists. The author provides detailed descriptions of the five Rovash scripts, presents their relationships, connections to other scripts, and explains the most significant rovash relics.

Based on the discovered relations, the author introduces the systematic description of the rovash glyphs in the **Rovash Atlas** together with a comprehensive genealogy of each grapheme as well.

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